

An historical study of the Proto-Indo-European nominal derivational morpheme *-ti-

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By

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ACKNOWLEDGEMENTS

Many of those who know me will be slightly amused when I say that this thesis (< *d^hh₁-ti-) has been a long time in the making. Personal circumstances and the general scope of the project have made it so, I guess. My thanks must first go to my family, friends, and supervisors for their patience with me, and for their sticking by me over the years.

The biggest share of the thanks must go to my supervisors: Victor Parker Andrew Carstairs-McCarthy. I'm sure I haven't been the ideal student, so thank you for your time and patience. In particular, special thanks must go to Victor for taking me through a quick introduction to Hittite at the beginning of my MA study, and for the hours spent going through my thesis and discussing it with me.

In many ways writing an MA on Indo-European has been a lonely process. This is partly because the University of Canterbury does not have an Indo-European Studies programme, and there haven't been many students who have done anything similar to what I have done. Nevertheless, I wouldn't have got to this stage if not for the encouragement from Victor and the other staff in the Classics department, and some of the staff from Linguistics. I was also fortunate enough to spend a year at Uppsala Universitet (2010-11) studying Comparative Indo-European Linguistics, Sanskrit, and Avestan under the Christiane Schaefer and Leonid Kulikov. Before I returned home I also managed to attend the Leiden Summer School in Languages and Linguistics. Thanks to all these people who helped get me where I am now.

ABBREVIATIONS

Abbreviated Titles

(Please see bibliography for more information on these works)

CHD = *Chicago Hittite Dictionary* (Güterbock *et al.*)

DELL = *Dictionnaire Étymologique de la Langue Latine: Histoire des Mots* (Ernout)

EDG = *Etymological Dictionary of Greek* (Beekes)

EDPC = *Etymological Dictionary of Proto-Celtic* (Matasović)

EDPG = *Etymological Dictionary of Proto-Germanic* (Kroonen)

EDIL = *Etymological Dictionary of Latin and the other Italic Languages* (De Vaan)

EDIV = *Etymological Dictionary of the Iranian Verb* (Cheung)

EWA = *Etymologisches Wörterbuch des Altindoarischen* (Mayrhofer)

GEW = *Griechisches etymologisches Wörterbuch* (Frisk)

HED = *Hittite Etymological Dictionary* (Puhvel)

HEG = *Hetitisches Etymologisches Glossar* (Tischler)

HIL = *Etymological Dictionary of the Hittite Inherited Lexicon* (Kloekhorst)

KHW = *Kurzgefaßtes Hethitisches Wörterbuch* (Friedrich)

LIPP = *Lexikon der indogermanischen Partikeln und Pronominalstämme* (Dunkel)

LIV = *Lexikon der indogermanischen Verben* (Rix)

MUN = *Die Morphologie des urgermanischen Nomens* (Bammesberger)

NIL = *Nomina im indogermanischen Lexikon* (Wodtko *et al.*)

Grammatical Terms

abl. = ablative case

abs. = absolute

acc. = accusative case

act. = active voice

dat. = dative case

gen. = genitive case

impv. = imperative

inf. = infinitive

inst. = instrumental case

loc. = locative case

nom. = nominative case

pass. = passive voice

part. = participle

pl. = plural

pret. = preterite

sg. = singular

Languages

Gaul = Gaulish

Goth = Gothic

Lat = Latin

Latv = Latvian

Lith = Lithuanian

MIr = Middle Irish

MW = Middle Welsh

OAv = Old Avestan

OEng = Old English

OFris = Old Frisian

OHG = Old High German

OIr = Old Irish

ON = Old Norse

OPers = Old Persian

OPruss = Old Prussian

OSax = Old Saxon

Osc = Oscan

OSwe = Old Swedish

PIE = Proto-Indo-European

Toch A = Tocharian A

Toch B = Tocharian B

Umbr = Umbrian

YAv = Young Avestan

INTRODUCTION

In this thesis I shall be discussing the nominal derivation suffix in ***-ti-** which has a fairly major role in many of the so-called “late” Proto-Indo-European (Proto-Indo-European hereafter may be abbreviated as PIE) languages—especially in forming action and result nouns. I shall first give a thorough literature review which will examine the various threads of scholarship up to the present day, focussing particularly on notions of form and function. Much of the scholarship predated the discovery and decipherment of the Anatolian languages, which are among the oldest attested Indo-European languages, so I feel that there is a need for such a discussion. The likely fact that Anatolian split off from Proto-Indo-European much earlier than the other Indo-European families and the potential that it preserves a much better and more archaic picture of early Proto-Indo-European really drives this need for an overhaul of scholarship. Following my literature review I will discuss some linguistic theories that seem particularly relevant. I will begin with a discussion on phonological matters (including accent and ablaut) and follow on with those concerning semantics. In particular I introduce the theory of grammaticalization. I believe that Proto-Indo-European had a morpheme in ***-ti-** that was used to form instrumental and ablative case endings, which had developed from the morpheme in ***-ti** that helped to form instrumental and ablatival adverbs. This is important because I ultimately try to show that this morpheme is not to be connected with the ***-ti-** nominal derivational morpheme. Following my linguistic discussion, I shall discuss many of the individual Indo-European language families. For different reasons I neglect Balto-Slavic, Tocharian, and Armenian: I leave out Balto-Slavic because of my incompetence in modern Baltic and Slavic languages (the works in German and English I did not find particularly helpful); I leave out Armenian and Tocharian partly because of unfamiliarity with these languages, and partly because I could not see a lot of evidence one way or the other that the *ti*-stems existed in these languages (I assume they were in Armenian, but you can seldom be sure what you are dealing with one because of phonetic developments).

A major theme central to a number of different theories regarding the ti-stems¹ is that the ti-stems are closely linked with the formation of compound nouns (e.g. usually preverb + (root + suffix)). Looking at the oldest stages of many Indo-European language families, I have found that this is not the case at all. In fact, in the earliest stages of Celtic, Germanic, Greek, Italic, and Vedic, there is a marked tendency for any given verbal root to produce ti-stem simplex (non-compound) rather than a ti-stem complex (compound). The only exception I found to this was in the Iranian family. A more thorough diachronic study of Iranian may explain this finding better, although I must assume this was a development that occurred after Proto-Iranian split from Proto-Indic.

My study agrees with all scholars, as far as I am aware, that the ***-ti-** suffix is most commonly added to a zero-grade root. At this stage this is still best explained by Jochem Schindler's ablaut model.² Olsen and Rasmussen theorize that ti-stems were zero-grade because the accent fell on the first element of a complex.³ As I mentioned above, I consider it unlikely that ti-stems were only found in complexes, so I seriously challenge this view.

Each of my chapters on the various language families begins with a short introduction on the source materials and key reference works, followed by the major findings. Below this I include my data for the language family. Some of these datasets are immense (e.g. Avestan and Vedic in particular), and the length was generally determined by my source materials. It was a struggle to decide how best to organize my data, but I opted ultimately to list each entry first by PIE root. I include references to major reference works in order to simplify the discussion. I will leave it to the reader to follow these references, if he or she would like to learn more about the rich debates surrounding much of the data. I often make some comment on contentious items, and I weigh in

¹ For example, see Karl von Bahder, *Verbalabstrakta in dem germanischen Sprachen: ihrer Bildung nach dargestellt*. (1880) §5 pp.76-7 (including footnote); see Jacob Wackernagel, *Indoiranisches* (1918) in *Kleine Schriften* vol.1 pp.299-330; and see Birgit Anette Olsen and Jens Elmegård Rasmussen, *Indo-European –to-/tu-/ti-: A case of phonetic hierarchy*, published in *Compositiones Indogermanicae: In memoriam Jochem Schindler* (1999) ed. By H. Eichner, H. Chr. Luschützky, V. Sadovski. pp.421-35.

² Jochem Schindler, *L'Apophonie des Noms-Racines Indo-Européens* in *Bulletin de la Société de Linguistique de Paris* (1972) 67, pp.31-8.

³ Birgit Anette Olsen and Jens Elmegård Rasmussen, *Indo-European –to-/tu-/ti-: A case of phonetic hierarchy*, published in *Compositiones Indogermanicae: In memoriam Jochem Schindler* (1999) ed. By H. Eichner, H. Chr. Luschützky, V. Sadovski. pp.421-35.

where reference sources disagree or remain silent. My section on Anatolian differs a little from the rest of my sections. First, there are many more uncertain items compared with other language families. For this reason, I list alphabetically the Anatolian data by the word attested, not by PIE root. I also include Anatolian items that have phonetics that could potentially signal a ***-ti-** stem. I keep my net fairly wide in this respect, so I include much data that I ultimately dismiss. Considering ti-stems in Anatolian have barely been discussed in any PIE literature, this chapter is one of the most important chapters in this thesis, and consequently I spend much more time discussing the data. There are three suffixes in Hittite (and other Anatolian languages) that are traditionally reconstructed as ti-stems: *-zil-* (***-ti-l-**), *-uzzi-* (***-u-ti-**), and *-ašti-* (***-as-ti-**). A major tendency in the Anatolian languages is to stack suffixes on top of one another. Ultimately I find, for example, that the complete lack of ***-u-** suffixed substantives corresponding with nouns in *-uzzi-* strange. Likewise, when we have examples of Anatolian st-stems that must reflect ***-s-t-**, I find it odd that we would need to reconstruct a ti-stem – particularly considering how Anatolian loved to add the *i-Motionssuffix* to nouns. Similarly, when Anatolian has plenty of t-stems, and plenty of il-stems, and very little evidence of ti-stems, it is strange that *-zil-* is analysed as ***-ti-l-** and not ***-t-il-**. My overall conclusion is that Anatolian never had the ***-ti-** nominal derivation suffix to begin with. This supports the idea that Anatolian was one of the first branches to split off from PIE. I believe the ti-stems must have developed in the period soon after the split, which explains how widespread the ti-suffix is in the later-PIE languages.

LITERATURE REVIEW

In this chapter I shall be examining in rough chronological order the scholarship concerning the Indo-European ***-ti-** suffix. I shall try to identify how various views may appear similar or dissimilar to others within the field of Indo-European studies, and without.

The end of the eighteenth century saw the rapid development of the field of Indo-European philology, contemporary with other philological movements such as Friedrich August Wolf's (1759-

1824) *Altertumswissenschaft*, which emphasized a more rigorous and holistic philological approach to the study of Greek and Roman cultures.⁴ Likewise, we see a steady increase in Indo-European philological rigour being applied by the field's pioneers, William Jones (1746-94), Friedrich von Schlegel (1772-1829), Jacob Grimm (1785-1863), and Rasmus Rask (1787-1832).⁵

Franz Bopp (1791-1867) was the first to offer published opinions on the entirety of Indo-European grammar, and many of his views are for the most part valid to this day. Although Bopp cannot be called a neogrammarian (*Junggrammatiker*) –as they came later –the way by which he adhered to sound change laws was not dissimilar. Bopp is also the first, to my knowledge, other than the Ancient Sanskrit Grammarian Pāṇini (*Aṣṭādhyāyī* 7.2.9), to recognize the *ti*-suffix. Bopp mentions in a number of places that it was used in the formation of feminine abstract nouns,⁶ and in the formation of some numerals.⁷ Bopp recognizes that nouns in **-ti-* tend to have accented root syllables.⁸ He also describes the Greek *-σῑα-* suffix as a **-ti-* suffix⁹ with an **-a-* suffix on the end, and the Latin *-tion-* suffix as **-ti-* with **-on-* on the end.¹⁰

August Schleicher (1821-1868), being able to build on Bopp's work, contains more extensive and precise information. He notes first that **-ti-* resembles **-ni-* in function, although much commoner, and can form abstract nouns/verbal substantives/*nomina actionis* and infinitives,¹¹ and has the function of occasionally forming *nomina agentis*.¹² It can be used as a primary suffix or as a secondary suffix with **-tā-* or **-tū-* (**-tā-ti-* and **-tū-ti-* respectively), and is used in forming the

⁴ See James Turner, *Philology* (2014) for a great study of philology as a discipline.

⁵ See Winfred P. Lehmann's *A Reader in Nineteenth Century Historical Indo-European Linguistics* (1967) for examples of work by these scholars. Available online at www.utexas.edu/cola/centers/lrc/books/readT.html.

⁶ Franz Bopp, *Vergleichende Grammatik des Sanskrit, Zend, Griechischen, Lateinischen, Litthauischen, Gothischen und Deutschen* (1833) §91, §142, §261, §840 (in the latter case Bopp sees the **-ti-* suffix as a phonological variant of the **-to-* suffix), and §841.

⁷ Ibid. §320

⁸ Ibid §841

⁹ Note that Greek has a rule, in the assibilating dialects, that Proto-Greek **t* > *s* / *_i*, providing the preceding phoneme is not an **s*.

¹⁰ Ibid §844

¹¹ August Schleicher, *A Compendium of the Comparative Grammar of Indo-European, Sanskrit, Greek and Latin Languages* Part 2(1877) §95, §98

¹² Ibid §98

numeral.¹³ Schleicher recognizes this suffix in Sanskrit gerundives in *-tya-* and in Greek feminines in *-σῑα*, and in the Latin complex suffix *-ti-o(n)-*.

Worth a brief note, Bruno Lindner (1853-1930) gave a short discussion on the **-ti-* suffix in his book *Altindische Nominalbildung: Nach den Samhitas dargestellt* (1878). He is for the most part descriptive, indicating where the accent falls in numerous examples, but he does go a little further when he proposes that that the **-ti-* suffix is in origin two different suffixes: one that forms verbal abstracts; the other that forms *nomina agentis* (he even takes the variation of Greek *-τι-* and *-σι-* to reflect the functional division of the suffix(es)).¹⁴ This appears to me to be the first clear homophonic theory of the **-ti-* suffix.

Karl von Bahder makes an interesting departure from the consensus view of Schleicher in his discussion of verbal abstracts in the Germanic languages.¹⁵ Bahder observes that *ti*-stems in Gothic are always connected to nouns with preverbs, whereas *tu*-stems are not:¹⁶

ti-stems	tu-stems
<i>Ga-kusts</i> “test”	<i>Kustus</i> “test/trial”
<i>Fra-lusts</i> “loss”	<i>Lustus</i> “desire/lust”
<i>Us-vahsts</i> “growth/increase”	<i>Vahstus</i> “growth/stature”

This theory which centres on the connection between **-tu-* and **-ti-* is picked up, as we shall see, later by Jacob Wackernagel and could have implications for a much later theory proposed by Rasmussen and Olsen. Bahder provides the explanation, at any rate, that the **-ti-* suffix was more abstract than the **-tu-* suffix, and therefore a naturally better fit with the heightened abstractness

¹³ Ibid §98. More specifically on the numeral see the section on decads in §111.

¹⁴ Bruno Lindner, *Altindische Nominalbildung: Nach den Samhitas dargestellt* (1878). §53 pp.76-9.

¹⁵ See Karl von Bahder, *Die Verbalabstrakta in dem germanischen Sprachen: ihrer Bildung nach dargestellt*. (1880) §5 pp.62-80.

¹⁶ Note that definitions come from Guus Kroonen’s *Etymological Dictionary of Proto-Germanic* (2013) pp. 313, 345, and 566 respectively. The definition for *us-vahst* is taken from Joseph Wright’s *Grammar of the Gothic Language* (1910).

provided by the preverb.¹⁷ I must confess some doubt as to whether any of these words are more abstract than the other, with or without the preverb, particularly considering that excepting the ***lust-** forms the examples are near synonyms.

Karl Brugmann (1849-1919), represents a new, heightened level of linguistic description and reconstruction. Building on Bopp and Schleicher's works, he produced his *Grundriss der vergleichenden Grammatik der indogermanischen Sprachen* (1886-1892). His *Grundriss* is even to this day –despite being somewhat out of date –considered the standard grammar of Indo-European, and presents a massive set of data from the known Indo-European languages (The Tocharian and Anatolian languages were yet to be deciphered). Karl Brugmann was also a leading figure among the emerging Neogrammarians, whose hypothesis, that sound laws must be followed without exception, is still followed more or less by modern historical linguistics, although perhaps not as rigidly, recognising developments in areal linguistics. I will set out Brugmann's points on the ***-ti-** suffix here:

- Was used as a primary suffix to form feminine *nomina actionis*. §99
- Developed from these verbal abstracts into infinitives. §99
- Appears to have developed *nomina agentis* from *nomina actionis*. §99
- Forms, particularly in the Rig Veda, adjectives. §99
- Sometimes forms denominative Abstracts, particularly numerals. §99
- The root tends to be zero-grade. §100
- The accent fluctuates between the root and the suffix. §100
- The secondary suffix ***-en-** could be added to ***ti**. §100
- The suffix could replace other nominalising suffixes. §100
- It could secondarily be attached to a thematized verb or aorist stem. §100
- It could be attached to a root with reduplication. §100

¹⁷ Karl von Bahder, *Verbalabstrakta in dem germanischen Sprachen: ihrer Bildung nach dargestellt*. (1880) §5 pp.76-7 including footnote.

- Numerals (decads) were formed with this suffix, as were some adverbs. §101
- Could form some nouns that had concrete meaning, such as Skr. Yuvatí- “young woman.” §101
- Formed a complex suffix with **-es-* or **-os-* (**-es-ti-* and **-os-ti-* respectively) which seems to have been unified at an early date §101
- Appears to have a complicated relationship with a form without i in **-tāt(i)-* and **-tūt(i)-*. This is parallel to the pairs of **nok^h-t-* and **nok^h-ti-* “night”, and **dekm^h-t-* and **dekm^h-ti-* “a unit of ten.” §102

For the most part, scholarship of the **-ti-* suffix has moved little since Brugmann. Although there are now competing views, Brugmann’s remains standard.

Following the same line of enquiry as Bahder, Jacob Wackernagel (1853-1938) in a 1918 article advanced the idea that there are traces of the same system where **-ti-* is found in compounds and **-tu-* is not. He argued that his was not only present in Germanic, but also in the oldest forms of Indo-Iranian and Greek, and potentially in Italic.¹⁸ Again, I have some doubts as to the validity of this hypothesis. We find a number of words in the Rig-Veda without a preverb, for example *iṣṭí-* which reflects a number of roots: **h₂eis-* “suchen”¹⁹ (e.g. RV 1.62.3 and 6.8.7) and **h₁eish₂-* “kräftigen; antreiben”²⁰ (e.g. RV 9.97.42). The root **h₂eis-* has been proposed in the compounds *dív-iṣṭi-*²¹, although this seems to me to be from the root **H₁ag-* “verehren”²² and **djeu-* “Himmel(sgott); Tag” (“the day sacrifice”), and *gáv-isti-* from **h₂eis-* and **g^héu-* “cow” (“desirous of cattle”), and *ásvam-isti-* (“desirous of horses”). Here we see that compounded and non-compounded forms exist side by side in the earliest Vedic period, so without some very firm evidence it would seem unwise to claim that a complementary distribution once existed.

¹⁸ Jacob Wackernagel, *Indoiranisches* (1918) in *Kleine Schriften* vol.1 pp.299-330.

¹⁹ LIV p.260 and EWA 1.pp.270-1

²⁰ LIV p.234 and EWA 1.pp.271-2.

²¹ WzRV.

²² LIV pp.224-5. Please note that a **H* represents any laryngeal.

In 1933, Pierre Chantraine (1899-1974) published his monograph, *La formation des noms en Grec Ancien*. Chantraine takes a mostly Brugmannian view of this suffix, noting that it can appear in simplexes and complexes, creates verbal abstracts and some old *nomina agentis*, and in a few cases instrument nouns (*nomina instrumentalis*). Chantraine also adds that they were particularly used in compounds, in line with Bahder and Wackernagel's views. He acknowledges that Greek, however, had mostly lost this **-tu-/*-ti-* division, but makes a reasonable argument that it once existed, explaining away logically some un-compounded *ti*-stems as later creations.²³

Eduard Schwyzler (1874-1943) is the next to join the argument in his *Griechische Grammatik* (1939). He sees the suffix as being the suffix **-t-* with a connecting composition vowel **-i-*. We will re-examine this idea at a later date, particularly in light of the Anatolian data. Schwyzler views the function similarly to Chantraine, and finally argues that the complex suffix *-τιος/σιος* is not related to the **-ti-* suffix; but is instead a complex of the nominal suffix *-το-* and adjectival suffix *-ιο-*.²⁴

Émile Benveniste (1902-1976) made a radical departure from the more consensus views of the others in his work, *Noms d'agent et noms d'action en Indo-European* (1948). Benveniste takes a monosemic approach to the suffix in that he tries to argue that the suffix **ti* only has a single function:

“**ti* indique l'action objective, réalisée hors du sujet par un accomplissement fini en soi-même et sans continuité; apte à caractériser toute notion « effective » sur le plan noétique ou dans un acception concrète.”²⁵

Benveniste insists that the **-tu-* suffix, which appears to many to be functionally synonymous with the **-ti-* suffix, is indeed different:

²³ Pierre Chantraine, *La formation des noms en Grec Ancien*. (1933) §217 pp. 275-6.

²⁴ Eduard Schwyzler, *Griechische Grammatik* (1939) vol. 1. §20 p. 504.

²⁵ Émile Benveniste, *Noms d'agent et noms d'action en Indo-Européen* (1948) p. 112.

“*tu dénote l’action comme subjective, émanant du sujet et l’accomplissement, en tant que prédestination ou disposition interne, déploiement d’une virtualité ou pratique d’une aptitude personnelle, dirigée toujours dans le même sens.”²⁶

Looking again at the Gothic ti-stem *gakusts* mentioned by Bahder, Benveniste cites this sentence:

Pairh gakust þis andbahtjis (2 Corinthians 9:13)

[διὰ τῆς δοκιμῆς τῆς διακονίας ταύτης]

“*Through the test of this service/ministry.*”

Here is his translation and explanation:

“par le preuve de ce service”, c’est-à-dire “par le preuve de ce service donne (de votre libéralité et de vos sentiments pieux)”.²⁷

Benveniste then looks at the corresponding tu-stem *kustus*:

Ei ufkunnau kustu izwarana (2 Corinthians 2:9)

[ἵνα γνῶ τὴν δοκιμὴν ὑμῶν]

“In order that I might know the proof of you (pl).”

Again, here are Benveniste’s comments:

“(Je vous ai écrit) pour savoir par votre épreuve (=en vous mettant à l’épreuve) si vous êtes obéissants en toutes choses” ; *kustus* signifie l’ “épreuve”, non la “preuve”, l’épreuve comme

²⁶ Ibid.

²⁷ Ibid p.106

ressentie et dont le caractère *subjectif* se marque à la liaison pronominale (“l’épreuve qui est votre fait”)²⁸.

In addition to these passages, Benveniste includes many from non-Gothic sources. Notably he includes these lines from the *Odyssey*:

Κύκλωψ, αἴ κέν τίς σε καταθνητῶν ἀνθρώπων
ὀφθαλμοῦ εἴρηται ἀεικελίην ἄλαωτύν,
φάσθαι Ὀδυσσεῖα πτολιπόρθιον ἐξαλαῶσαι,
υἱὸν Λαέρτεω, Ἰθάκῃ ἐνὶ οἰκί' ἔχοντα. (*Odyssey* 9:502-5)

O Cyclops, if any among mortal men should ask you about the unseemly blinding of your eye, say that Odysseus, sacker of cities, blinded [it], the son of Laertes, who [=Odysseus] has a home in Ithaca.

Since the eye (ὀφθαλμοῦ) has become blind (ἄλαωτύν) under the agency of Odysseus, Benveniste considers the tu-stem ἄλαωτύν natural, rather than a ti-stem variant.²⁹

In the next chapter, I shall look more in depth at Benveniste’s theory, considering how it may relate to verbal aspect and how, if possible, it can be related to other theories.

Not long after Benveniste’s work, Albert Debrunner (1884-1958) published volume II.2 of Jacob Wackernagel’s *Altindische Grammatik, Die Nominalsuffixe* (1954). As the title suggests, Debrunner’s focus is the grammar of Sanskrit, not Indo-European specifically. Nevertheless, Debrunner does not shy away from listing comparative evidence and, aside from this, Sanskrit has real value for the age and size of its corpus. In addition to this, Debrunner’s work has an excellent

²⁸ Ibid

²⁹ Ibid p.68.

reputation for being thorough and reliable. There is considerable overlap with Brugmann, yet I will summarize Debrunner's points:

- *-ti-* in Sanskrit serves most commonly to form nouns from verbs with abstract sense or in other connected senses. §465a
- Often *-ti-* formations replace older suffixless formations (i.e. old root nouns). §465a
- Often has a correspondence with other Indo-European languages. §465b
- Has many correspondences peculiar to Indo-Iranian seen sometimes in simplex, more often in complexes (prefixed nominal forms), sometimes as a simplex in Indic or Iranian and a complex in the other, sometimes following an *-i-* or an *-a-* or even an *-s-*, and fairly rarely with a reduplicated root. §466.
- The root is usually zero-grade, and seldom full grade (presumably e-grade as an o-grade would usually lengthen under Brugmann's Law). §467
- In the Rig Veda, simplex are usually oxytones (accented on the suffix). §468
- In Indic and Iranian **-ti-* commonly occurs in nominal compounds (particularly with a prefix). §469
- Sometimes a compound nominal in *-ti-* corresponds to a simplex nominal in *-tu-*. §469
- Can be used to form infinitives (usually in the dative case, but sometimes with the instrumental) §470
- Can be subjected to concretisation. Sometimes later indicating a location or instrument. §471a
- Much more commonly in older texts *-ti-* forms agent nouns and adjectives (i.e. actors of the verbal idea). §471b
- Sometimes the 3rd person singular primary verbal ending in *-ti* can be declined as a noun. §472
- It serves somewhat exceptionally to form nominals from other nominals. §473a
- It can help form numerals (particularly decads or other number groups). §473b
- Often used to form names of body parts. §474c

- Mostly formed feminine gendered nouns, sometime masculines, and very seldom neuters (which all appear to be secondary creations). §475³⁰

There is little new discussion of the ***-ti-** suffix over the next 20 years. Manu Leumann refers to it in his 1977 (2.ed) grammar of Latin, *Lateinische Laut- und Formenlehre* (pp.342-53).³¹ Likewise, Ernst Risch summarizes much of the previous scholarship in his monograph on Homeric word formation, *Wortbildung des homerischen Sprache* (2.ed 1974 §16).³² In 1999 Birgit Olsen and Jens Elmegård Rasmussen published an article a memorial volume to Jochem Schindler proposing that ***-to-/*-tu-/*-ti-** were all allophonic variations of the same morpheme.³³ Olsen and Rasmussen propose that at some point the variation occurred as a result of stress patterns: the allomorph ***-to-** was stressed, and therefore maintained the original vowel quality; the allomorph ***-tu-** was never stressed, but rather the previous syllable was; finally, the allomorph ***-ti-** was likewise never stressed, but because it formed nominal compounds the stress was at least one syllable further back than the stress of the ***-tu-** forms. This could be represented as follows:

Root + accented suffix	Accented root + suffix	Accented prefix + root + suffix
*k^uṛ-tó-s “made”	*k^uér-tu-s “act of making”	*h₁sú-k^uṛ-ti-s “of good making”

Olsen and Rasmussen assume, presumably like Bahder and Benveniste, that in the earliest stages of Proto-Indo-European, the ti-stems were limited entirely to nominal compounds, and that in later stages this limitation was relaxed. We shall see later in all of Indo-European sub-families that I have investigated, with the exception of Iranian, that the chances are greater that any given verbal root will build a simplex, opposed to complex, noun. This does not necessarily rule out Olsen and Rasmussen’s conclusion, although it certainly makes it seem less likely. They also claim that the

³⁰ Albert Debrunner, ed. Jacob Wackernagel, *Altindische Grammatik*, vol. II.2 (1954) pp.620-43.

³¹ Manu Leumann, *Lateinische Laut- und Formenlehre* (1977) 2ed.

³² Ernst Risch, *Wortbildung des homerischen Sprache* (1974) 2ed.

³³ Birgit Anette Olsen and Jens Elmegård Rasmussen, *Indo-European -to-/-tu-/-ti-: A case of phonetic hierarchy*, published in *Compositiones Indogermanicae; In memoriam Jochem Schindler* (1999) ed. By H. Eichner, H. Chr. Lusčitzky, V. Sadovski. pp.421-35. This study is extended later by Rasmussen, who proposes that the -i- development, as seen in the ***-ti-** suffix, can be seen in a plethora of different suffixes (e.g. ***-ro-/-ri-**) and particularly in the much discussed Caland suffixes: Jens Elmegård Rasmussen *The compound as a phonological domain in Indo-European*, in *Transactions of the Philological Society*, Vol.100:3 (2002) pp.331-50.

ablaut patterns, which would not have arisen with the accent early on in the word, were analogically copied from the tu-stem nouns.

While evidence from Vedic suggests that the first element of a compound is often accented –and many exceptions to the rule are due to Wackernagel’s Law³⁴ under which an accent on a final *i*, *u*, *r*, *l*, *m*, *n* of the first element of a compound is cast right to the first syllable of the second element –this is not specific to ti-stems. Just because ti-stems are associated with compounds, accented on their first member, this does not mean that their phonetic form is caused by this relationship. Ti-stems are also associated with simplicia –and I would argue more so than with compounds. When ti-stems occur as simplicia in the Rig-Veda, there is a major tendency for them to have the accent on the suffix.³⁵

Olsen and Rasmussen also take exception to Benveniste’s interpretation that both the ***-ti-** and ***-tu-** suffixes have different functions. They argue that the somewhat fuzzy or vague semantics that Benveniste describes would become obscured in compound ti-stems, and the frequent supine and infinitival forms produced with tu-stems have no semantic limitations (presumably they reflect whatever aspects the original verb had). Olsen and Rasmussen’s view is attractive in that it supports to some degree Bahder’s proposal of ***-ti-/*-tu-** doublets, while offering a superior explanation that the differences between the suffixes are caused by vowel gradation –not the vague idea that one suffix is picked because it is “more abstract” than the other. Crucial to Olsen and Rasmussen’s argument is the fact that there is a reasonable amount of evidence suggesting that stress was used derivationally: i.e. stress on the suffix would derive adjectives, whereas stress elsewhere would derive nouns. An example of this found in Greek is *τομός* “cutting”: *τόμος* “slice” where both words are inherited from the same root, ***temh₁-** “to cut”.³⁶

Recently a thorough study has been undertaken by George E. Dunkel of the Indo-European particles and pronominal stems.³⁷ In this study Dunkel is drawn to adverb endings and nominal

³⁴ See, for example, Alexander Lubotsky, *The system of nominal accentuation in Sanskrit and Proto-Indo-European* (1988). p.33 (§2.11).

³⁵ Ibid. pp.33-7.

³⁶ LIV p.625

³⁷ George E. Dunkel, *Lexikon der indogermanischen Partikeln und Pronominalstämme*, 2 vol., (2014) Hereon referred to as LIPP.

suffixes, and doing so he treats a **-ti-* suffix, assuming it had an adverbial origin.³⁸ Whether this is the same suffix we have yet to see. However, this is what Dunkel has to say about this suffix:

- Has an ablative and instrumental function. (p.185)
- Can be seen in a range of adverbial and instrumental adverbs. (pp.185-7)
- Can be seen as the number indifferent, athematic Ablative-Instrumental ending in Proto-Anatolian [manifests as *-z(a)* in Hittite]. (p.185)
- Also seen as an athematic ablative-instrumental ending (number indifferent) in Hittite [*-azzi* or *-az*]. (p.186)
- It was potentially used to form a reflexive particle in Proto-Anatolian. (p.186)
- It could be suffixed to a particle, a pronominal stem, or directly to a verbal root. (p.187-9)
- Occasionally other suffixes were suffixed to it, mostly in instrumental hyper-characterisations (pp.189-90)
- The adverb multiplicative ending in **-ti* gets its origin from the instrumental. (p.190)
- The movement from the adverbial category into the nominal paradigm was very limited. (p.190)

Particularly with Dunkel's last point, we are forced to wonder whether this is indeed the same suffix we find in nouns and adjectives. *Ti*-stems are common throughout most of the Indo-European languages, but whether this is originally the same ablative-instrumental adverbial suffix or whether it has some entirely different origin (phonetic in the case Olsen and Rasmussen, or combinatorial in the case of Schwyzler). If we accept an adverbial origin, we will have to see whether the theory of grammaticalization can or cannot account for this. We are logically not confined to a theory of one origin for adverbs and one for nominals, but potentially multiple origins even for just the nominals. From here is necessary to determine not only what is linguistically plausible about all these theories,

³⁸ Ibid. pp.185-91.

but also how the Anatolian data fits within these theories –particularly as none of the above, except Dunkel, have referred to any of the Anatolian languages.

PHONOLOGICAL DISCUSSION OF *PIE*

In order to make any assumptions about the various theories of **-ti-* –in particular that of Olsen and Rasmussen that **-ti-*, **-to-*, and **-tu-* are all allomorphs of the suffix complex **-t-* and **-e/o-* theme vowel –we need to have a clear picture of the basic reconstructed PIE phonemes and the pitch/stress system. Where I am able, I will relate more specific Indo-European theories with those that apply more generally to the world’s languages.

Here is a table produced in *Indo-European Linguistics: an Introduction* that represents the main-stream understanding of how the PIE phoneme inventory looked:³⁹

Consonants					
<i>Stops</i>					
	<i>Labial</i>	<i>Dental</i>	<i>Palatal</i>	<i>Velar</i>	<i>Labio-Velar</i>
	<i>*p</i>	<i>*t</i>	<i>*k'</i>	<i>*k</i>	<i>*k^u</i>
	<i>*(b)</i>	<i>*d</i>	<i>*g'</i>	<i>*g</i>	<i>*g^u</i>
	<i>*b^h</i>	<i>*d^h</i>	<i>*g^h</i>	<i>*g^h</i>	<i>*g^{uh}</i>
<i>Fricatives</i>					
		<i>*s</i>			
<i>Laryngeals</i>					
				<i>*h₁, *h₂, *h₃</i>	
Resonants					
<i>Nasals</i>					
	<i>*m</i>	<i>*n</i>			
<i>Continuants</i>					
	<i>*r, *l,</i>	<i>*j, *u</i>			
Vowels					
<i>Short</i>					
	<i>*e, *o, (*a)</i>	<i>*i, *u</i>			
<i>Long</i>					
	<i>*ē, *ō, (*ā)</i>	<i>*ī, *ū</i>			

Table 1: *Indo-European Phoneme Inventory*

³⁹ James Clackson, *Indo-European Linguistics: An Introduction*, 2007, p.34.

The stops are fairly straightforward, although the present view is disputed by many from the Leiden school who support the so-called glottalic theory which posits that the ‘traditional’ unaspirated voiced stops */*b, *d, *g/* are actually ejective (or ‘glottalized’) voiceless stops */*p’, *t’, *k’/*.⁴⁰

The three laryngeals, **h₁*, **h₂*, and **h₃*, are three sounds hypothesized by the laryngeal theory. This theory, founded by the Swiss linguist Ferdinand de Saussure (1857-1913), stated that the different qualities and quantities of vowels in the Indo-European Daughter languages could often be explained under the processes of assimilation and compensatory lengthening in the presence of a consonant (the term laryngeal is not used, although he seems to have a laryngeal in mind when he uses the symbol Q to represent what we now call **h₃*).⁴¹ It was not until 1927 that Polish linguist Jerzy Kuryłowicz observed that Hittite showed an *-ḫ/-ḫḫ-* symbol in some cognates of words that Saussure had predicted contained “laryngeal” consonants.⁴² Acceptance of this theory has been slow in some circles, although it is probably universally accepted now. Here are the main outcomes of the laryngeals in Late-PIE:

**h₁*: **h₁e > *e* ; **eh₁ > *ē*

**h₂*: **h₂e > *a* ; **eh₂ > *ā*

**h₃*: **h₃e > *o* ; **eh₃ > *ō*

In an extreme application of the Laryngeal theory, some scholars argue that Indo-European had only one vowel: **e*. These scholars argue that **a* and **ā* are either reflexes of **h₂*, or occur only in onomatopoeic or loan words. It is true that there are very few cases of **a* and **ā* that cannot be explained by the presence of **h₂*. The **o* vowel has a complicated status among scholars –this will be discussed later –because there are many examples of it that are not conditioned by the presence of the laryngeal **h₃*, although many assume that it arose under particular stress or pitch conditions, or

⁴⁰ One of the main arguments for this theory is that */p’/* is missing proportionally much more often in the world’s languages than */b/*.

⁴¹ *Mémoire sur le système primitif des voyelles dans les langues indo-européennes* (1879) accessed from W. P. Lehmann, *A Reader in Nineteenth Century Historical Indo-European Linguistics* (1968). Pp.217-24.

⁴² Jerzy Kuryłowicz, *ə indo-européen et ḫ hittite*. In Taszycki, W. and Doroszewski, W., *Symbolae grammaticae in honorem Ioannis Rozwadowski*, vol. 1, 95–104. (1927)

perhaps in the proximity of labial or laryngeal (not necessarily just $*h_3$) consonants. This will be discussed later as it has great relevance to Olsen and Rasmussen’s argument. Anatolian complicates the laryngeal theory somewhat. More often than not the laryngeals are still present without compensatory lengthening of the preceding vowel. One example of laryngeal loss and compensatory lengthening is the Hittite abstract suffix $-\bar{a}tar$ / $-\bar{a}dar$ / < PA $*\bar{a}’d\bar{a}r$ < PIE $*-éh_2-t_r$. On the other hand we find forms such as the unaccented neuter pl. ending $-\bar{u}$ in Hittite $\bar{a}ss\bar{u}$ “goods” < PIE $*h_1\acute{o}s-u-h_2$ and short unaccented neut.pl. ending in $-a$ as seen in Hittite $s\bar{a}kuwa$ “eyes” nt.pl. < $*s\acute{o}’g^w-ah_2$ that shows the short vowel $-a$ where we expect a vowel plus laryngeal to have once existed. Generally speaking an unaccented long vowel was shortened in Hittite, so a form like $\bar{a}ss\bar{u}$ with initial stress must have undergone laryngeal loss and compensatory lengthening *after* the shortening rule applied, whereas the form $s\bar{a}kuwa$ –again with initial stress –must have undergone the same process *before* the rule came into operation.⁴³ There seems to be fairly good evidence that the Anatolian languages underwent the regular laryngeal “colouring” of the short $*e$ vowel that is common in the later attested Indo-European languages.⁴⁴

It is also assumed that there were forms of the resonants and glides vocalized between consonants, or consonant and word boundary. These were $*m$, $*n$, $*r$, $*l$, $*i$, $*u$. In some of the daughter languages (particularly Greek) it appears that the laryngeals could be vocalized –although some have argued that this was more of a case of anaptyxis than vocalisation.⁴⁵ The outcomes of these vocalized consonants show a lot of variation between sub-families (and sometimes within sub-families), so it would be fair to say that the vocalized resonants, possibly with exception of the semi-vowels $*j$ and $*u$, remained intact until well after the late-PIE period.

⁴³ Sara E. Kimball, *Hittite Historical Phonology* (1999) p.384

⁴⁴ Ibid. pp.140-52.

⁴⁵ H Craig Melchert, *Anatolian Historical Phonology* (1994) in the *Leiden Studies in Indo-European* series, p.47.

MORPHOPHONOLOGY

ACCENT TYPE

Under Olsen and Rasmussen's theory, accent is the key factor in determining which allomorph is found. It is not exactly clear what kind of accent PIE actually had. Sanskrit and Greek both seem to have had mobile pitch-accents –albeit with some differences –so it is often assumed that PIE did too. Greek had a morae-based system where the mora achieves prominence by a rise in pitch followed by a fall in pitch on the next mora (this could be in the same syllable). Sanskrit in contrast had a syllable-based system where the syllable gained prominence through a rise in pitch followed by a fall in pitch on the next syllable. It is assumed that Sanskrit reflects the original state of affairs in PIE because many of Greek's long syllables (two morae) result from a contraction of two syllables (mostly by loss of semi-vowels). Both Sanskrit and Greek showed tonal contrast, the defining character of tonal languages. In Greek, for example, we have the two forms οἶκος “at home” and οἴκος “houses”, whose different meanings are only indicated by the different accents.⁴⁶ Tonal languages do not have the need to make any voicing or aspiration contrasts, as tone alone is sufficient to differentiate words.⁴⁷ One thing that is clear is that Greek and Sanskrit maintained their voice and aspiration contrasts at the same time as having tonal contrasts. There is evidence in Germanic of a mobile accent from the operation of Verner's Law in verb and noun paradigms.⁴⁸ Verner's Law is the exception to Grimm's Law. Grimm's Law (attributed to one of the famous Grimm brothers, Jacob Grimm, 1786-1863) posited that a phonetic chain shift occurred within Proto-Germanic:

- PIE voiceless stops [T] became PG fricatives [θ]
- PIE voiced (unaspirated) stops [D] became PG voiceless stops [T].
- PIE voiced aspirates stops [D^H series] lost their aspiration in PG [D].

There were a number of exceptions to this, which gave rise to Verner's Law, named after its founder, Karl Verner (1846-96). Verner had proposed that PG fricatives, which had developed under

⁴⁶ Ibid. pp.74-8.

⁴⁷ Moira Yip, *Tone* (Cambridge Textbooks in Linguistics). 2002. Pp. 35-8.

⁴⁸ See, for example, Orrin W. Robinson, *Old English and its Closest Relatives*, (1992) pp.8-9.

Grimm's Law or that had been directly inherited from PIE (*s), were voiced and then despirantized (*s behaved a little differently: *s > *z > *r) when the PIE accent followed the sounds in question. It is precisely through Verner's Law we find the Modern English cognates 'to lose' and 'for-lorn' and the paradigm alternation between 'was' and 'were'. In the first instances the accent preceded the *s, in the second, it followed.⁴⁹ Since my thesis is treating the PIE *-ti- suffix, the voiceless dental stop is subject to Grimm's Law in Germanic. Often this suffix was expressed as -ð (or some orthographical equivalent of a voiceless dental fricative), but sometimes it was expressed as -d (e.g. *birth* and *deed*). It depends on where the accent fell, although paradigm levelling was common in all the Germanic languages, so we do not always have a reliable picture of the accent. Many of the Balto-Slavic languages show evidence of a mobile pitch accent, although I am ill-equipped to discuss this field of study. It is unclear what is inherited and what is innovation, and there are quite a number of different schools of thought.⁵⁰ Avestan presumably had an accentual system similar to Vedic, although there are very few indications of where the accent was placed in a word, except for the outcome of the Pre-Avestan *r before voiceless stop. If the preceding vowels *á or *ǎ were accented, the *r was devoiced. We see this in the OAv and YAv *aməša-* "immortal" < PIr *amərta- < PIE * ǵ-mr̥'-to- "immortal". This form contrasts with finally accented *mərəta-* "dead" (Vedic form is *mṛtá-*).⁵¹ We will see later that the devoicing of a consonant following a high tone appears possible. A significantly more common change in languages is voicing of consonants between vowels.

The accent in the Anatolian languages, particularly Hittite, is a little unclear. There was no consistent way of indicating accent in the cuneiform, although plene writing sometimes seems to indicate accent as well as vowel length.⁵² Scripts seldom need to express accent, as speakers know where it would be by context. English, for example, has no need to indicate where stress falls, or where we may find a rise or fall in intonation. Consider the noun-verb pairs such as re.cord (noun) and re.cord (verb), and con.duct (noun) and con.duct (verb).

⁴⁹ Neville E. Collinge, *The Laws of Indo-European* (1985) pp.203-16

⁵⁰ I would recommend Thomas Olander, *Balto-Slavic Accentual Mobility* (2009) pp.14-46. It has a clear but concise review of many of the arguments.

⁵¹ Ibid. p.55-6.

⁵² See Sara E. Kimball, *Hittite Historical Phonology* (1999) p.57-9, for a more detailed discussion.

TONOGENESIS

Tonogenesis, the birth of tones, is at present poorly understood. Indo-European, it is believed, had a pitch accent, albeit a fairly simple one. Like stress, pitch can have strong correlations with particular vowel qualities. This potentially has some ramifications for Olsen and Rasmussen's theory (e.g. *-tV- > *-to-/*-tu-/*-ti-). To help develop a better picture of tonal languages and their development, I shall provide below two lists which show the relationships between tone and vowel quality, and tone and consonants, as found in many languages of the world:

*Tone and Vowel Quality*⁵³

- Some languages can have any tone on any vowel. Relationship appears totally independent.
- Different tones are associated with different laryngeal properties (e.g. breathiness, glottalisation).
- Different tones are associated with different pharyngeal qualities (e.g. the width of the pharyngeal cavity –usually characterized by the Advanced Tongue Root Feature (ATR)).
- Some languages may show a relationship between tone and cavity features (e.g. vowel height), although this is by no means clear.

*Tone and Consonant Type*⁵⁴

- Voiced Obstruents are often associated with low tone. Can be all voiced obstruents (including sonorants, for example) or just a subset (eg. Consonants with breathy voice).
- There are cases, although they are rare, where a high tone can result in the devoicing of a consonant (See my mention of *r devoicing in Avestan above).
- There seems to sometimes be a relationship between tone and other laryngeal properties besides voicing (e.g. aspiration and glottalisation). Often though, these laryngeal qualities are found on the vowel, and most of the known examples where this is not the case are

⁵³Taken from: Moira Yip, *Tone* (Cambridge Textbooks in Linguistics). 2002. Pp. 31-3.

⁵⁴Ibid pp 33-5.

historically reconstructed. Seoul Korean has sentence tone, not lexical tone, which will start with a High (H) tone if the phrase-initial segment is aspirated or tense.

- Consonants almost always affect tone, rather than tone affecting the consonant.

STRESS

Phoneticist, Edward Flemming,⁵⁵ builds on a well established body of phonetic theory,⁵⁶ which has as its base this theoretical assumption: an optimal language would maximize the distinctiveness of vowel contrasts to avoid confusion during communication. However, scholars have argued that this alone is unsatisfactory, and therefore attempt to take into account articulatory effort. Likewise, these arguments often treat vowel distinctiveness in isolation, neglecting, for example, the effects of neighbouring consonants on vowel quality. A number of other contexts might include vowel harmony or stress. Flemming, in his article, takes up the issue of how stress affects vowel systems. Typically, stressed syllables have a slightly longer duration than unstressed syllables –with the exception often of the initial syllable which is often slightly longer as well. Consequently, when a speaker attempts to produce a syllable with reduced duration, and considering high vowels are easier to produce than low vowels, they tend to raise the height quality of vowels, often resulting in mergers (e.g. [i] and [e] become [i] in unstressed syllables). Reduced duration has considerably less effect on whether a vowel is front or back in quality, and possibly even less on whether the vowel is rounded or not. The logical consequence of these assumptions is that ***-te-** could remain ***-te-** in certain stressed situations, but become ***-ti-** in unstressed positions, but it seems unlikely that it could also develop into ***-tu-**. Certainly ***-to-** could develop into ***-tu-**, but this would assume that ***-te-** and ***-to-** were different morphemes entirely, unless an earlier condition could be found that explains the splitting of ***-te-** and ***-to-**.

⁵⁵ Edward Flemming, *A Phonetically-Based Model of Phonological Vowel Reduction*.⁵⁵

⁵⁶ See particularly Björn Lindblom.

ABLAUT MODEL

Jochem Schindler in the 1970s proposed a series of noun and verb accentual paradigms which could be reconstructed in Indo-European⁵⁷ which have now come to be widely accepted by the majority of scholars. Basically there were two types of pitch accent: static and kinetic (also known as ‘dynamic’). It is also understood that there tends to be agreement between accent and vowel quality, although the exact relationship is unclear. An accented morpheme –a morpheme can be a root (R), a suffix (S), or an ending (E) –will generally have a vowel with an e or o quality, whereas an unaccented vowel will typically have an o quality, or there will be no vowel at all. These are often called e-grade, o-grade, and zero-grade (z-grade) respectively. Occasionally mentioned in the literature is a lengthened grade which can often be explained as an e/o-grade followed by a laryngeal, lost with resulting compensatory lengthening of the vowel.

Here is an outline of the reconstructed accent types:

<i>Acrostatic I</i>	Strong ⁵⁸	R(ē')	S(z)	E(z)
	Weak	E(é)	S(z)	E(z)
<i>Acrostatic II</i>	Strong	R(ó)	S(z)	E(z)
	Weak	R(é - z)	S(z)	E(z)
<i>Kinetic</i>	Strong	R(é)	-	E(z)
	Weak	R(z)	-	E(é)
<i>Proterokinetic</i>	Strong	R(é - ó ⁵⁹)	S(z)	E(z)
	Weak	R(z)	S(é)	E(z)
<i>Hysterokinetic</i>	Strong	R(z)	S(é)	E(z)
	Weak	R(z)	S(z)	E(é)
<i>Amphikinetic</i>	Strong	R(é)	S(o)	E(z)
	Weak	R(z)	S(z)	E(é)

Table 2: PIE Accent Types

⁵⁷ See Jochem Schindler, *L'Apophonie des Noms-Racines Indo-Européens* in *Bulletin de la Société de Linguistique de Paris* (1972) 67, pp.31-8

⁵⁸ The strong vs weak distinction refers to the case system. Nominative and Accusative cases form the strong category; the other cases form the weak category.

⁵⁹ O-grade is thought to be by analogy from Acrostatic II root nouns. See Benjamin W. Fortson, *Indo-European Language and Culture: An Introduction* (2010) p.121.

There are a few generalities that we find here: the weak cases are never accented further left in the word than the strong cases; the syllable following the accent tends to be an o-grade or z-grade. Most of the time, the accent corresponds with the e-grade. We see this in all of the ablaut types except for the Acrostatic II type which has an accented o-grade on the root in the strong cases.⁶⁰ Because of this tendency, it is often assumed that morphemes appear with the o-grade or z-grade in the syllable directly following the accent.⁶¹ There is little consensus whether this is actually the case, however, and the fluctuation between the z and o grades is problematic.

Michael Weiss argues that ***o** was possibly the regular outcome of PIE ***e** in a closed unstressed syllable,⁶² although some scholars accept that this change applies to open as well as closed syllables.⁶³ This would imply that PIE could have more than one e-grade in a word, and this solution is difficult, but not impossible, in its own right.

Oswald Szemerényi argues for an assimilation rule where ***o** < ***e** after being rounded and backed by a following nasal.⁶⁴ This does not strike me as being particularly likely as, although vowels are commonly raised before a nasal (for example, the [a] in Danish *Dansk* “Danish”), I’m not aware that they are regularly rounded –although this may be the case if the nasal in question was /m/.

Robert S. P. Beekes had a further alternative where ***e** stands in the pronominal system and ***o** in the nominal.⁶⁵ The data is so abound with examples of both vowels in each system, that this seems unlikely.

George Dunkel takes another view, arguing that the ***e** form of the theme vowel instead comes from ***o**, not the other way around. Dunkel proposes the following rule, which was not confined necessarily to the theme vowel, but also to the ablaut grades: ***o** > ***e**/ _# (a word final ***o**

⁶⁰ For an easy to follow and excellent discussion of PIE ablaut and accent, I would recommend James Clackson, *Indo-European Linguistics: An Introduction*, 2007, pp.75-88.

⁶¹ See, for example, Torsten Meissner, *S-stem Nouns and Adjectives in Greek and Proto-Indo-European: A Diachronic Study in Word Formation* (2005) p.33

⁶² Michael Weiss, *Outline of the Historical and Comparative Grammar of Latin* (2009), pp.385-6.

⁶³ James Clackson, *Indo-European Linguistics: An Introduction*, 2007, p.82.

⁶⁴ Oswald Szemerényi, *Introduction to Indo-European Linguistics* (1996), pp.121, 250.

⁶⁵ Robert S. P. Beekes, *The Neuter Plural of Thematic Nouns. Derivatives from a Stem in -e- from Thematic Nouns*, in *Früh-, Mittel-, Spätindogermanisch: Akten der IX. Fachtagung der Indogermanischen Gesellschaft vom 5. bis 9. Oktober 1992 in Zürich*, ed. By G Dunkel, G Meyer, S Scarlata, C Seidl (1994), pp.1-15.

becomes *e). Dunkel also suggests a second rule that *o becomes *e before a dental (*s, *t, *d^h), but not before a nasal (*m, *n). To explain many of the exceptions where there seems to be a final *o, Dunkel proposes that there must have been a loss of final consonants after this rule had been in operation, or potentially some kind of vowel contamination may have occurred.⁶⁶ Dunkel's theory is somewhat attractive as it explains the frequent e~o variation not only in numerous Indo-European particles, but also plenty of verbal and nominal endings. There are many exceptions, however, so it would be wise not to accept it entirely.

In a recent article by Martin Kümmel,⁶⁷ Kümmel argued for a different vowel system for Pre-PIE. He proposes that the e ~ a contrast was secondary (originally a single vowel). Under the Laryngeal theory, long vowels in most cases could be removed from the system, explained away as the result of compensatory lengthening following laryngeal loss. One of his main misgivings for the traditional reconstruction is that the ablaut alternation of e~o doesn't have a good phonological explanation. Typologically the change of *o > *e, or vice versa, is unlikely under stress or pitch conditions alone. He also takes issue with the argument that the o-grade is traditionally unaccented. He argues that there are many examples of reconstructed o-grades (root nouns like *dóm- "house" and *pód- "foot", the strong stem of the perfect, thematic action nouns etc.). Kümmel then goes on to provide evidence of accented *o from the IE languages and that in some situations it has the tendency to be long unlike other short vowels:

(Anatolian) *ó became long ā in Luwian, while *é remained short before an obstruent. E.g. *pód- > pāt- "foot"; *médu- > maddu- "wine". In Hittite, *ó unconditionally became ā, while *é became a and i before some clusters. e.g., *konk- > kānk- 'to hang, to weigh', *morg- > mārka- 'to divide', *spond- > ispānt- 'to libate', *pod- > pāt- 'foot' vs. *leng- > link- 'to swear', *kers- > kars- 'to cut', *endo > anta 'in(to)', *ses- > ses- 'to sleep'. Also PIE *a seems to have remained short, cf., e.g., Hittite *h₂ant- > hant- 'forehead; in front'.

⁶⁶ George Dunkel, LIPPS 1, pp.93-4.

⁶⁷ Martin Kümmel, *Typology and Reconstruction: the Consonants and Vowels of Indo-European* in *The Sound of Indo-European* (2012) ed. Benedicte Nielsen Whitehead, Thomas Olander, Birgit Anette Olsen, and Jens Elmegård Rasmussen, pp.291-329.

(Tocharian) ***o** remained a strong vowel. ***e** merged with ***i** and became a weak vowel.

(Indo-Iranian) According to Brugmann's Law, ***o** became ***ā** in open syllables, in contrast to all other short vowels that remained short.

Kümmel also notes the well known fact that ***o**, like long vowels, could not be coloured by laryngeals. He then goes on to explore ablaut in PIE. He observes that o-grade is actually quite common in the strong cases of different ablaut patterns (particularly the Acrostatic II type's e/o~z grade roots, the Amphikinetic type's o~z grades on the suffix, and the o~z grade alternation on Perfect verbs. He did not mention the so-called Hoffman suffix ***-Hon-** which has the z-grade alternant ***-Hn-**, but it could easily be added to his argument.⁶⁸ A slightly contentious bit of evidence could be the o-grade found in many s-stems, although s-stems are possibly late innovations and don't seem to fit any particular ablaut pattern. Kümmel, on this evidence, suggests that a solution to the e~o~z ablaut alternations would most plausibly be achieved if we reconstruct a single vowel ****ā**.⁶⁹ This vowel could be shortened under certain conditions to ****a**. Stressed ****ā** would in PIE become ***o**, whereas unstressed ****ā** became ***e**. Finally, secondary short ****a** would be deleted. This reconstruction has its problems, although the phonological changes seem far more realistic than positing that ***e** became ***o** or was deleted under conditions of stress or pitch. Likewise, a two vowel (e~o) system essentially lacking an ***a** would be typologically unusual. An early stress accent would account for the changes in Kümmel's system, since stressed vowels are universally longer than their unstressed counterparts, and front vowels are often raised and/or centralized, but not usually backed. Dunkel (above) seems to be the only other scholar, that I am aware, who argues for the change ***o** > ***e**. The later scholars certainly have more research to call on from many linguistic sub-disciplines (e.g. typology). We would probably have to assume the development of a pitch accent in a slightly later stage of PIE, if we were to accept this theory.

⁶⁸ See Benjamin W. Fortson, *Indo-European Language and Culture: An Introduction* (2010) p.124.

⁶⁹ Double astericks here implies that this in an earlier stage: Pre-Proto-Indo-European

Rasmussen and Olsen argued that **e* so-called “theme-vowel” became **é* when accented before a voiceless segment, but became **ó* when accented before a voiced segment. When unaccented, **e* regularly became **u* immediately post-tonically, and **i* more than one syllable from the accent. Later they assume that **i* as the unstressed vowel form was generalized in all unstressed positions at the expense of **u*, and that eventually **e* and **o* could stand without an accent.⁷⁰ This argument assumes the following chronology:

- (1) Stressed syllable became **e*

Post-tonic syllable became **u*

Syllable more than one syllable after tone became **i*

Pre-tonic syllables presumably were in the zero-grade

- (2) Accented **é* became **ó* before a voiced segment, otherwise it remained **é*.
- (3) **i* began to replace unstressed syllables.
- (4) Originally stressed **e* and **o* no longer required stress.

The sound change from **é* to **ó*, as I remarked earlier, is somewhat unnatural. The condition in which this apparently occurs is before a voiced segment. As we saw earlier with Yip’s analysis, this condition would be typical of a pitch accent, where voiced segments are said to sometimes be associated with low tones. There is little reliable evidence for tone affecting height, and probably less for it backing the vowel. Likewise, using Flemming’s analysis, it is unlikely that **e* would be backed to **o* in a stress system. We might see, however, **e* being raised to, or merging with, **i*, or **o* being raised to **u*, or both sounds being centralized to some kind of short centralized vowel such as /ə/. It seems unlikely that the **ti* and **tu* suffixes developed from the **to* suffix in the way that Olsen and

⁷⁰ Birgit Anette Olsen and Jens Elmegård Rasmussen, *Indo-European –to-/–tu-/–ti-: A case of phonetic hierarchy*, published in *Compositiones Indogermanicae; In memoriam Jochem Schindler* (1999) ed. By H. Eichner, H. Chr. Luschützky, V. Sadoski. p. 422. See also Jens Elmegård Rasmussen, *Studien zur Morphophonemik der indogermanischen Grundsprache* (IBS 44, 1989) pp.136-44).

Rasmussen have proposed. It may be safer to assume that the ***ti** stems were a complex of ***t** and ***i**, not ***t** and the ***e/o** theme vowel.

SEMANTICS OF THE *-TI- SUFFIX

ASPECT

A great deal has been said about aspect of the verb in Indo-European and more generally cross-linguistically. However, very little has been said about nominal aspect. Elisabeth Leiss, for example, in a 2007 book chapter, argued that definiteness is the nominal equivalent to the verbal perfective aspect.⁷¹ Leiss mentions that “In Gothic as well as in Slavic languages, prefixed verbs generally are perfective verbs plus an additional semantic modification.” She also provides a list of Gothic verbs with imperfective un-prefixed forms and with parallel, perfective prefixed forms.⁷² In the book *Aspect: an introduction to study of verbal aspect and related problems* (1976) by Bernard Comrie, Comrie remarks that German transforms atelic verbs into telic verbs by adding a prefix (e.g. *kämpfen* ‘fight’ and *erkämpfen* ‘achieve by means of a fight’) and that English can do the same by way of a postposition (‘eat’ vs. ‘eat up’).⁷³ It seems apparent to me that both Leiss and Comrie are talking about the same aspect, albeit with different terminology. I would also argue that under Comrie’s definition Leiss is talking about an aspect that is not ‘perfective’ but ‘telic’. I argue that German has other means of perfectivising verbs, including those that have already been prefixed. Comrie defines a telic situation as one that has an inherent end point to the action. i.e. if you *make a chair* the action can never be regarded as complete until the chair is made. If we stop the action part of the way through construction, is it correct to say that we *made a chair*? No. On the other hand, if I said *John is singing*, it would be true to say –stopping at any point –that *John has sung*. *To make a chair* has an inherent end-point (the completion of the chair), and so we may describe it as being telic. *John is singing* does not have an inherent end-point, so we consider it atelic. However, *John is singing*

⁷¹ Elisabeth Leiss, *Covert patterns of definiteness/indefiniteness and aspectuality in Old Icelandic, Gothic, and Old High German*, in *Nominal Determination: Typology, context constraints, and historical emergence*, Ed. by Elisabeth Stark, Elisabeth Leiss and Werner Abraham. (2007) Pp.73-102.

⁷² Ibid. p.90

⁷³ Bernard Comrie, *Aspect: an introduction to study of verbal aspect and related problems* (1976), p.46.

a song would change the sentence to telic, as the inherent end-point would be the completion of the *song*. Whether we should consider these transformations in English and German, and Gothic for that matter, one of perfectivisation or telicisation, or one of simple transitivisation, I am not entirely sure. I.e. by adding an object in English we can sometimes turn an ordinarily intransitive verb transitive. Likewise, in German ordinarily intransitive verbs can sometimes become transitives with the addition of a prefix.

An interesting fact regarding the ti-stems is that they are almost entirely derived from verbal roots. Ti-stems may very occasionally be denominal or deadjectival, or used to create adverbs. Deverbal nominals are a complicated class, as they have a large variety of meanings. Although Indo-Europeanists and other philologists have used terms such as *nomina actionis* “action nouns” for a long time, it is not until relatively recently that deverbal nominals have been subject to real semantic analysis.⁷⁴ Deverbal nominalisations have been said to denote results, manners, actions, processes, events, states, ordinary objects, facts and propositions.⁷⁵ Deverbal nominalisations are very sensitive to the aspect of their deriving verb, they can often preserve the argument structure as a noun phrase of their verbal counterpart (the verb phrase), and they tend to be predictable to a certain degree. Jane Grimshaw proposes the following types of nouns: Participant nominals, result nominals, residual individual nominals, and event and fact nominals. I shall summarize Grimshaw’s discussion.

Participant Nominals

In English, some research has covered the –er and –ee suffix (e.g. employer, employee).

- Seem to preserve some properties of their verbal base: argument structure, i.e. taking complements; and event interpretation.
- The relationship between these nominals and the verbs they correspond to reflects the nature of the arguments of the verbs.

⁷⁴ See particularly Robert B. Lees, *The Grammar of English Nominalizations* (1960), and Zeno Vendler, *Linguistics in Philosophy* (1967).

⁷⁵ Jane Grimshaw, *Deverbal Nominalizations* in *Semantics: An International Handbook of Natural Language Meaning*, Volume 2 (2011), edited by Klaus von Heusinger, Claudia Maienborn, and Paul Portner, pp.1292-1313.

Generally speaking the -er suffix can be used to derive nominals from an eventive verb or a non-eventive verb. Grimshaw uses the example of *waxer*.

(1) I know that Dan is a **frequent** *waxer* of parquet floors.

What is important here is the use of *frequent* as an event modifier. It can only be added in the context when the deverbal nominal (d-nominal) refers to an eventive verb.

(2) *I know that this mop is a **frequent** floor *waxer*.

For the same reason, we could say that (3) Alexander was a **frequent** *destroyer* of cities, but not that (4)* the **frequent** *destroyer* sailed out of the harbour. Sentence (3) refers to real events, whereas sentence (4) refers more to the potential of this particular ship for destroying. The destroyer ship will still be a destroyer whether or not it actually destroys something. The -er suffix disregards grammatical relations, as Dan in (1) has the Agent thematic relation and is the Subject of the verb (i.e. Dan waxes the floor), whereas the *mop* in (2) has the Instrument thematic relation and behaves a bit like the Subject of the verb (i.e. The mop waxes the floor < Dan mops the floor *with the mop*).

Turning to the intransitive unergative and unaccusative verbs, it is suggested that we can often construct -er nominals from intransitive verbs with external arguments (unergatives), e.g. runner, jumper < he runs, she jumps. However, we usually cannot form -er nominals from intransitive verbs without external arguments (unaccusatives), e.g. *faller, *arriver < he falls, she arrives.⁷⁶ Here is a small list of thematic relations with corresponding d-nominals in -er:

Agent: *kicker*

Patient: none

Experiencer: *lover*

Theme: none

Location: *bunker, freezer* (could also be an instrument)

⁷⁶ Grimshaw is inconsistent in her terminology in *ibid*, calling unergatives unaccusatives and vice versa.

Source: *promiser*

Goal: *buyer*

Instrument: *opener*

Based on this list, it seems that the only thing –er nominals have in common is their position as external arguments, not their thematic relations. Since unaccusatives have the theme as their subject –but not external argument –they generally do not participate in the derivation of –er nominals. Likewise, patients are always internal arguments, and are thereby immediately excluded from this process as well.

Result Nominals

Result nouns in English are count nouns and they reflect accurately the aspect of their base verb. “Creation” verbs which enact a change of state on their object generally form result nouns. E.g. *he built a house* assumes that a *house* was non-existent at the beginning of the process, yet it was a complete house at the end. If we create a deverbal noun from the verb *build*, we can derive *building*. A *building* therefore is something that has come into existence, or been *built*. Likewise, *she invented a new recipe* assumes that there was no recipe when she started the process, yet there was at the end – her *invention*. And thus, a new recipe could accurately be described as an *invention* if we create a deverbal nominal from the verb *invent*. So too, we could do the same for *the church collected money during the service* and describe the *money* that had been *collected* as a *collection*. Another type of result nominal is that derived from ‘image creation’ verbs. E.g. *transcription*. A *transcription* is a result nominal if it refers to a sentence such as *he transcribed the ancient text*. In this case, it wouldn’t refer to the ancient text itself, but a copy thereof. Both types suggest that in the derivation of result nominals it is not so much the direct object of the verb that is important, but the object produced/created from the action. Nevertheless, more often than not the direct object of the verb will be the same as the thing produced. Artemis Alexiadou argues that result nominals are non-argument

supporting.⁷⁷ It would be interesting, however, to see how others take sentences such as *come see my collection of stamps*, or *he gave me the transcription of the ancient text*. These sentences feel well formed to me, and they seem to preserve a result meaning. Nevertheless, result nominals such as *building* feel a lot more awkward when combined with an argument. The sentence **do you see the building of the house over there?* is quite different from *do you see the building over there?* In the first sentence it is almost implied that the building process is still ongoing, whereas in the second it is complete. The semantics of *collection* and *transcription* are probably responsible for this difference. *Collection* come from the Latin verb *com* “together” + *legō* “I gather/pick/collect”, and *transcription* comes from the verb *trans* “across” + *scribō* “I write”. Both seem to suggest movement of objects from one place to another: in the first case, movement of stamps from various locations [source] to a single place [goal] and, in the second case, movement of words across from one page (original [source]) to another (new page [goal]). *Building* on the other hand has no suggestion of movement between source and goal.

There are a few residual types of nominals which Grimshaw argues are not legitimately *result nominals* although scholars often classify them as such. These are created from verbs such as transport (transportation), propose (proposal), refer (referral), confer (conference), manage (management), agree (agreement), mix (mixture), store (storage), cover (coverage), and cut (cut). Some of these nouns have semantics similar to *collection* and *transcription*, I think. E.g. *conference* and *referral* derive from the Latin verb *ferō* “I carry/bear”. *Transport*, likewise derives from another Latin verb meaning “to carry/bear/take”, *portō*.

Event and Fact Nominals

There is a group of deverbal nominals which refers to verbal events. Grimshaw argues for two types: simple event nominals and complex event nominals. The difference between the two types lies in their ability to take arguments and whether or not they preserve the aspect of their parent verb. Complex event nominals may take arguments, and preserve aspect, similar to their corresponding

⁷⁷ Artemis Alexiadou, *Functional Structure in Nominals: Nominalization and ergativity* (2001), p.10.

verbs, whereas simple event nominals do not. An example that is often brought up is that of the word *examination/exam* from the verb *examine*.

1. They tore up their examinations/exams
2. The examination/exam took place at 6 pm.
3. We witnessed the examination/exam.
4. They examined the patient carefully.
5. The careful examination of the patient revealed that he was healthy.
6. *The careful exam of the patient revealed that he was healthy.

Grimshaw argues that while *examination* may take arguments, *exam* may not, hence the ungrammaticality of sentence 6. Likewise, *the examination of the papers* will work, whereas **the exam of the papers* will not. We see, also, that *examination* may take aspectual modifiers, such as *the examination of the papers in three hours*. In contrast, a simple event nominal cannot: **the exam for three hours*.⁷⁸ Note that there is some variation with regard to terminology. Alexiadou, for example, calls simple event nominals *result* nominals (or actually any d-nominal that does not take an argument), and calls the complex event nominals process nominals.⁷⁹ Complex event nominals are also sometimes known as *action* nominals.

Generally speaking, event nominals can all occur as the subject of a predicate like *take place*, *occur*, *happen*. In English, there is also the d-nominal in *-ing* which can be used to form a special variety of event nominals. *-ing* nominals can refer to individual objects (e.g. *he got a filling at the dentist's*), and to simple events (e.g. *the fighting takes place after the bars close*). The suffix can also refer to complex events such as, *the cook's careful simmering of the chicken*. This final type is known as a nominal gerund and, for the most part, it has a very similar distribution to regular complex event

⁷⁸ For these examples, see *ibid.* p.11.

⁷⁹ *Ibid.* pp.10-2.

nominals (usually) in *-ion*. There is a second type of gerund, the verbal gerund, which differs in a few ways, according to Grimshaw:

- (1) Although it is generally a DP, like nominal gerunds and other complex event nominals, it has essentially the entire internal structure of a clause.
- (2) Its lexical head is a verb, not a noun, and takes bare nominal complements (e.g. We appreciated the cook's *having* carefully simmered a chicken.).

Most of the criteria I regard possible for regular complex event nominals, such as the lexical head being a verb. It is quite possible to say *the registrar oversaw the doctor's examination of the patient*. In this case *the doctor's examination* is a DP, this DP is governed by the verbal head *oversaw*, and the phrase is almost a complete clause in itself (it has a subject *doctor[s]*, verb-like *examination*, and object [*of*] *the patient*). I think the only real difference is that these verbal gerunds may take bare nominal complements: *the registrar observed the doctor examining the patient*. *Examination* requires its internal argument to be a PP (of *the patient*), whereas *examining* does not (*examining the patient*) nor does it always require its external argument to appear in the genitive [*doctor's*] as a specifier.

There is another type of d-nominal mentioned by Grimshaw, following particularly philosophers such as Zeno Vendler: the fact nominals. Grimshaw provides, among others, the following two examples of complex event and fact interpretations:

- a. Careful simmering of the chicken for a whole day yields clear broth. (Event)
- b. Careful simmering of the chicken for a whole day made it delicious. (Fact)

I am not entirely convinced that this distinction is helpful outside of philosophy, so I am going to ignore it more or less. This example, and others Grimshaw propose, could easily be interpreted as complex event nominals.

Grimshaw goes on to discuss some unusual properties of d-nominals, particularly with regard to transitivity and argument assignment. One interesting thing about d-nominals in *-ing* is that they

cannot be constructed from stative verbs (*The [students'] believing/knowing of the story...)⁸⁰. Verbal gerunds are the exception. It is possible to form d-nominals in English from stative verbs (*annoyance*, *embarrassment*), so this is obviously a *-ing* specific restriction. *-ing*, in English as we have seen, is obviously used to create gerunds (verbal and nominal), simple event nominals (*a filling*) complex event nominals (*simmering*), and result nominals (*build a house* > *building*). Although, it can create result nominals from a number of accomplishment (telic) verbs, this is not true for all telic verbs, e.g. *transcribe* an ancient text > **transcribing*. Mind you, similar to *a transcription* we find the *-ing* result noun *rubbing*. This would refer to a piece of paper that has been rubbed with chalk or pastel over something with a hard, uneven surface (e.g. a brass plaque). This is a problematic example, however, as we seldom find a verbal parallel (usually *make a rubbing*) and, when we do, we have difficulty choosing the object (*paper* or *brass plaque*):

(a) she rubbed the paper on/over the brass plaque with the crayon.

(b) she rubbed the brass plaque with paper and crayon/with crayon on paper.

(c) she rubbed a brass.

Sentence (c) is the more technical way of saying this, although (a) and (b) are also acceptable. Nevertheless, *rubbing* does appear to be a result noun derived from a telic/accomplishment verb. Another type of d-nominal in *-ing* that has not been mentioned is a locative nominal (e.g. *lodging(s)* - “the place in/at which you lodge”) It is also possible to form adjectives with the *-ing* suffix in English.

A lot of the work on d-nominals, for the most part, seems to be highly Anglo-centric. There is no reason to believe that *-**ti**- should behave the same as English *-ing* and *-tion*, although we may expect that there would be some similarities between *-**ti**- and *-tion*, since the latter is derived from the former. The suffix *-tion* in English can be used to form result nominals (*collection*), complex

⁸⁰ A Google search revealed one recorded instance of a similar phrase, “The reader’s knowing of the story.” (<https://quizlet.com/1631867/40-literary-terms-flash-cards/>) Although prescriptive grammars label this as ungrammatical, it is possible that speakers of particular English dialects, or speakers who are relatively free from the influence of prescriptivism, would actually find such a sentence perfectly acceptable.

event nominals (*examination* –can be interpreted as a simple event as well), simple event nominals (*observation*), but it does not participate in the forming of gerunds (nominal or verbal). A quasi-agentive example with this suffix could be the word *congregation* (perhaps too, *delegation*, *mission*, *commission*, *prosecution*, *relation*). Judging by the multi-functional role *–ing* and *–tion* play in English, we should not be surprised by the many functions that are proposed for ***-ti-**.

To account for the huge range of functions a single suffix can play, for example the *–ing* suffix, it is necessary to look briefly at grammaticalization theory.

GRAMMATICALIZATION

Simply put, grammaticalization is the development from lexical to grammatical forms, and from less grammatical to more grammatical forms.⁸¹ Heine and Kuteva argue that there are four parameters of grammaticalization:

- a) desemanticization (or “semantic bleaching”) – loss in meaning content,
- b) extension (or context generalization) – use in new contexts,
- c) decategorialization – loss in morphosyntactic properties characteristic of lexical or other less grammaticalized forms, and
- d) erosion (or “phonetic reduction”) – loss in phonetic substance.⁸²

There are quite a number of different parameters proposed, reflecting the often conflicting views.⁸³ Heine and Kuteva also argue that grammaticalization is uni-directional: i.e. the change is always from less grammatical to the more grammatical, not the other way around. Despite this proposition, they do acknowledge some exceptions.⁸⁴

⁸¹ Bernd Heine and Tania Kuteva, *World Lexicon of Grammaticalization*, 2004. p.2.

⁸² Ibid.

⁸³ See, for example, Bernd Heine and Tania Kuteva, *The Genesis of Grammar: A Reconstruction* (2007) pp.33-5, for references to various theories.

⁸⁴ Bernd Heine and Tania Kuteva, *World Lexicon of Grammaticalization*, 2004. p.4

Heine and Kuteva argue for various layers in grammaticalization. These layers start from the most concrete lexical items (nouns) and progress to more abstract, more grammatical forms. Specifically, they argue that some nouns are at the lowest layer of grammatical development. They may develop into layer 3 adjectives and adverbs, or layer 2 verbs. From there, verbs are liable to become layer 3 adverbs, or layer 4 aspectual and negative markers. Adverbs may become layer 4 demonstratives, adpositions, or aspectual markers. In the next layer (layer 5), demonstratives may become pronouns, definite articles, relative clause markers, or complementisers; adpositions can become complementisers or case markers; and aspect markers can become tense markers. From here pronouns may become layer 6 agreement and passive markers; and relative clause markers, complementisers and case markers may become layer 6 subordinating markers of adverbial clauses.⁸⁵ Heine and Kuteva argue that plants, or plant parts, specific animals, and metals are frequently recruited into the adjective class (e.g. *rose* (plant) > *rose* (pink); *kākāriki* (NZ parakeet) > *kākāriki* (Maori word for colour “green”; *gold* (metal) > *gold* (colour)). Another group of words frequently recruited are sex-specific nouns, such as *man* and *woman* to indicate adjectives *male* and *female*. Accompanying these changes we often find the loss of morpho-syntactic features (e.g. plural markers) which shows that the parameter of decategorialization is in play. Likewise, necessary to the change is also the parameter of desemanticization where only one aspect of the noun is focussed on (e.g. the colour of gold, opposed to its relative hardness and heavy weight).⁸⁶

Despite this, Heine and Kuteva do not say much about derivation’s relationship with grammaticalization. Derivational affixes can change word classes independent of grammaticalization, and there seems to be little evidence for the uni-directionality of class change. Heine and Kuteva mention that gerunds in *-ing* are decategorialized verbs that have consequently lost their verbal properties (e.g. tense and aspect markers).⁸⁷ Considering gerunds display evidence of historical nominal morphology (i.e. they have the IE nominal derivational suffix in **-nt-*, and historically showed case and number marking) rather than verbal morphology, I’m somewhat sceptical whether

⁸⁵ Bernd Heine and Tania Kuteva, *The Genesis of Grammar: A Reconstruction* (2007) pp.110-4.

⁸⁶ Ibid. pp.60-2.

⁸⁷ Ibid. p.40.

this is actually the case. Christian Lehmann takes a similar stance to Heine and Kuteva, providing examples of nominals in *-ing* being used in increasingly grammatical ways:

- a) John's constantly reading magazines
- b) John's constant reading of magazines
- c) *the (constantly) reading magazines
- d) the (constant) reading of magazines⁸⁸

The first sentence (a) is almost totally verbal, taking a non-prepositional phrase (PP) object and permitting an adverb adjunct, whilst having a subject in the SpecTP⁸⁹ position (using terminology from the generative tradition). The second sentence has the subject in the SpecDP⁹⁰ position, it does not permit an adverb adjunct (which makes the third sentence ungrammatical), and it requires a PP object. The fourth sentence is essentially the same as the second, replacing the SpecDP subject with a simple determiner. This stance seems somewhat odd to me as it suggests that a verb (layer 2 of Heine and Kuteva's grammaticality scale) has become a noun (layer 1) without any obvious derivational process having taken place. It seems more plausible to me that the change is going in reverse (noun > verbal noun > verb), and that it is the decategorialization of the noun that permits the item to take adverbs and non-PP objects. I think there is much more evidence for this diachronically as well. For example, Indo-European infinitives reflect a large range of nominal derivational suffixes (e.g. simple and complex u-stems, i-stems, n-stems, (possibly) nd-stems and s-stems), and they also reflect a large number of case forms (locatives, datives, accusatives, and genitive/ablatives). Vedic Sanskrit has 35 different infinitival forms, and interestingly the form *-tum* (acc. tu-stem), which only occurs 5 times in the Rig Veda, is the form that would ultimately become the standard infinitival form in Classical Sanskrit.⁹¹ The variability suggests that in Vedic Sanskrit –and in PIE –infinitives were really verbal nouns expressed in the so-called oblique cases. The rich morphology of the verbal nouns in each PIE daughter family became gradually more fixed (decategorialization) and subsequently less nominal.

⁸⁸ Christian Lehmann, *Thoughts on Grammaticalization 2ed.* (2002), p.57.

⁸⁹ SpecTP is a term used within the x-bar theory of generative grammar. SpecTP refers to the specifier of a tense phrase (TP). On a syntax parse tree, SpecTP would be the daughter node of TP and sister node of T'.

⁹⁰ Like the SpecTP, SpecDP signifies that it is the specifier of a demonstrative phrase. SpecDP is closely linked to a noun phrase, just as SpecTP is closely linked to a verb phrase.

⁹¹ Andrew L. Sihler, *New Comparative Grammar of Greek and Latin* (1995), pp.606-8.

Heine and Kuteva do note in their *World Lexicon of Grammaticalization* that one common path of grammaticalization is from (allative >) purpose marker to infinitive marker (hence English *to*, or German *zu*, and Swedish *att* as a marker of the infinitive within the Germanic family).⁹² This may explain the frequency of dative infinitives in Indo-European (in the Rig Veda 85% of infinitives were formed in the dative⁹³), considering, for example, that in Vedic Sanskrit, Greek, and Latin, the dative case had the semantic role of expressing purpose.⁹⁴ The victory of the accusative infinitive in Classical Sanskrit may have more to do with case agreement between the object of the verb and its modifying verbal noun –it is worth noting that dative “objects” in Classical Sanskrit would often take dative infinitives. Looking at the infinitive category in English, we see the grammaticalization of a directional marker (“to”) into a marker of an infinitive. As in many cases of grammaticalization, we end up with a single lexeme with two functions: the original and the new. In the case of Classical Sanskrit, we may find infinitives marked with an accusative *tu*-stem, nevertheless we find at the same time *tu*-stems in the accusative that are not infinitives (e.g. *gātum* “path/road (acc)” beside *kārtum* “to do/make” –both are *d*-nominals). I would argue that this shows grammaticalization at the morpheme rather than the lexeme level –Heine and Kuteva propose that grammaticalization occurs at the lexeme level.⁹⁵ This would also explain why more grammaticalized morphemes are much more productive in languages (e.g. English *-ing* result nouns are far more restricted than event nouns, and these in turn are less productive than verbal gerunds, and Classical Sanskrit *-tum* infinitives are far more productive and numerous than regular *tu*-stem nouns).

An article by Hans Christian Luschützky and Franz Rainer, *Instrument and place nouns: A typological and diachronic perspective*, seems to be one of the few articles that explores whether grammaticalization is behind the common syncretism of instrument and place nouns, although they see little evidence for such a relationship, stating “no quantitative evidence in its support can be gained from Heine and Kuteva’s (2002) catalog of grammaticalization pathways in the languages of the world...instrument and locative meanings both repeatedly occur as source and target in

⁹² Bernd Heine and Tania Kuteva, *World Lexicon of Grammaticalization*, 2004. Pp.247-8.

⁹³ Andrew L. Sihler, *New Comparative Grammar of Greek and Latin* (1995), pp.606-8.

⁹⁴ See Arthur Macdonell, *A Vedic Grammar for Students* (1916) §200.

⁹⁵ See, for example, Bernd Heine and Tania Kuteva, *World Lexicon of Grammaticalization*, 2004. P.32.

grammaticalization chains, but never in a direct connection.”⁹⁶ Despite the silence of the *World Lexicon of Grammaticalization* we only need to look at English *by*, which is a locative marker in some contexts and an instrument/agent marker in passive constructions (e.g. *I live by the sea* (locative), and *I was cut by the knife* (instrumental) or *I was cut by him* (agentive) –English in this case seems to treat agents and instruments similarly). Vedic Sanskrit is similar to English in this respect as it may use a noun in the instrumental case to express an agentive or instrumental function.⁹⁷ Ultimately Luschützky and Rainer attempt to explain why a suffix might have two (or more) functions. Their main finding is that, in all of the languages they surveyed, there was no clear evidence of a word extending its semantics (e.g. from locative to instrumental) via grammaticalization pathways, semantic mapping, or the animacy hierarchy. They found that every case of functional syncretism, of which they were aware, was created a number of processes: concretisation of action nouns, ellipsis (the omission of words in a phrase), homonymization (one suffix becomes phonetically identical to another), and borrowing. They acknowledge that there may be cases of syncretism created by morphological reanalysis, although they note that they were unable to find any. I agree with Luschützky and Rainer that we should be wary of labelling the various functions of the *ti*-stems as having developed under grammaticalization. Indeed, a safer explanation may be that of “concretisation of action nouns” into agent nouns, or of “homonymization”.

To complicate matters, we find the **-ti-* suffix, the subject of this thesis, apparently occurring as an ablative or instrumental adverb suffix in PIE,⁹⁸ which is said to have developed into the instrumental case ending in Anatolian.⁹⁹ If we follow Heine and Kuteva’s unidirectionality of change hypothesis, and accept their system of layers, we have the problem of considering how an adverb marker became a noun marker. Because the *ti*-stems do not seem to exist in Anatolian, and because there is no detectable instrumental force in the later-PIE languages, it is probable that the **-ti-* nominal suffix has not developed from the **-ti* adverb suffix, although the *uzzi*-nouns in Hittite, which

⁹⁶ Christian Luschützky and Franz Rainer, *Instrument and place nouns: A typological and diachronic perspective in Linguistics 2013* ; 51(6):1301-1359. Pp.1312-3.

⁹⁷ Arthur Macdonell, *A Vedic Grammar for Students* (1916) §199.

⁹⁸ George E. Dunkel, *Lexikon der indogermanischen Partikeln und Pronominalstämme*. Bd.1, pp.185-91.

⁹⁹ Jay Jasanoff, **bhi, *bhis, *ōis: following the trail of the PIE instrumental plural* accessed from <http://www.people.fas.harvard.edu/~jasanoff/pdf/Following%20the%20trail.pdf> on 15 November 2016, p.3

do have an instrumental sense, may have developed from the instrumental suffix in **-ti*. This would require a development of adverb marker > (adposition) > case marker > instrumental noun marker, which is problematic as it would presumably contradict Heine and Kuteva's unidirectionality of change hypothesis.

CELTIC

CELTIC INTRODUCTION

My data for the Celtic languages are for the most part taken from Ranko Matasović's book in the *Leiden Indo-European Dictionaries Series, Etymological Dictionary of Proto-Celtic* (2009) which is henceforth cited as *EDPC*. I occasionally use Michiel De Vaan's *Etymological Dictionary of Latin and the other Italic Languages* (2008) from the same series, and Alfred Ernout and Alfred Meillet's *Dictionnaire Étymologique de la Langue Latine: Histoire des Mots* (revised 4th ed. 2001) which I cite as *DELL*. As I have elsewhere, and when appropriate, I try to link the words to *Lexikon der indogermanischen Verben* (*LIV*) and *Lexikon der indogermanischen Partikeln und Pronominalstämme* (*LIPP*). The languages frequently cited are Gaulish, Old Irish (OIr), Middle Irish (MlIr), Modern Irish (ModIr), Old Welsh (OW), and Middle Welsh (MW).

CELTIC DISCUSSION

Although many of the Celtic etymologies are controversial, there seems to be an overwhelming tendency for the roots (31 in total) affixed with *ti*-stems to be simplex (28), rather than complex (7), including 4 roots which are both. This is contrary to von Bahder's and Wackernagel's findings that *ti*-stems tend to be found in compounds. There appear to be 23 roots that are verbal in origin, and 2 nominal. There are 5 words that are adverbial in origin, and 1 that is a number (although this can probably be ruled out). Of the 23 verbal items, 13 appear to have a zero-grade root, 9 have an e-grade root, and 1 an o-grade. Of the 2 nominal roots, 1 is zero-grade and 1 is e-grade.

CELTIC DATA

Preverbs and Particles

***eti** EDPC 119; LIPP 2:260-4 “Yet, still, but” [LIPP von da aus; darüber hinaus, noch]

eti Gaulish

***k'm-ti** EDPC 188; LIPP 2:422-8 “Together with” [LIPP zusammen, mit, bei]

Simplex (Zero-grade root)

cét- ceta- OIr [***-th₂**]; *cant, can* MW [***-th₂**]; *canti-, Cantio-rix* Gaulish (place name); *céite* OIr “assembly” [***-tio-**]

Uncertain Preverbs and Particles

***ati** or ***ate** LIPP 2:93-6 Perfectivising preverb [LIPP zurück, wieder; weg, fort]

ad- OIr; *ed-/ad-/at-* MW; *Ate-gnatos* Gaulish (Personal name)¹⁰⁰

***per-ut(i)** EDPC 128; LIPP 2:607-14 “Last year”

inn-uraid OIr

***sem-** > PC ***semiti** < ***sem-X?** EDPC 329; LIPP 2:671-8 [LIPP vereint; ein]

These words are not well understood. Dunkel (LIPP) does not discuss them at all, and Metasović (EDPC) makes a tentative suggestion that they could be related to the particle ***sem** “one” plus ***i-ti/*i-th₂** “so” (see LIPP 2:368 for a discussion of ***i-ti/*i-th₂**).

Simplex (E-grade root)

emid OIr “as it were, nearly”; *hefyd* MW “also, too, either”

Deverbal Nouns

***b^her-** EDPC 79; LIV 76-7 “Act of carrying, judgment” [LIV tragen, bringen]

Simplex (Zero-grade root)

brith/breth OIr “Act of carrying, judgment”; *bryd* MW “mind, desire, intent, resolution”; *Britus* Gaulish (personal name, “judgment”); *brithem* OIr “judge” [***-ti-men-**]

***d^heh₁-** EDPC 91-2; LIV 136-8 “Heap/pile” [LIV stellen, legen, setzen; herstellen, machen]

The [s] in all the Celtic forms, except for the Gaulish, must have arisen from a form such as ***d^heh₁-sti-** or ***d^heh₁-T-ti-** (where ***T** is any dental stop). Both explanations seem somewhat unusual.

¹⁰⁰ Attested in a number of inscriptions. Presumably means “born-again”, although it could also mean “exceedingly well known”. See, for example, *Corpus Inscriptionum Latinarum (CIL)* 3.4732, 4764.

Simplex (Zero-grade root)

daiss MIr “heap, pile”; *das* MW “heap, pile”; *desi* OBret “heap, pile”

Complex (Zero-grade root)

Con-date Gaulish “Confluence” (place name)¹⁰¹

***h₂eh₁-** EDPC 45; LIV 257 “Furnace/oven” [*LIV* heiß sein]

Simplex (E-grade root)

áith OIr “kiln”; *odyn* MW “kiln”

***iek-** EDPC 435-6; LIV 311 [*LIV* sprechen]

Simplex (E-grade root)

icht ModIr “people, tribe”; *ieith* MW “language, nation, race”

***k'eh₂d-** EDPC 193-4; LIV 319 “hatred, hate” [*LIV* seelisch aufgewühlt sein]

Simplex (Zero-grade root)

cais OIr “hate” –also, strangely, “love”; *cas* MW “hatred, hate”

PC *kom-oxti- EDPC 215 “Power, wealth”

Possibly from ***kom-h₃ep-tí-** [*LIV* 298-9 herstellen]. The Proto-Celtic ***x** could reflect any PIE stop that is not a dental (See EDPC 9, number 1, for discussion of this development).

Complex (Zero-grade root)

cum-achtae OIr [***-tjo-**] “power, strength, might”; *comoid* MW “power”

1.*men- EDPC 266; LIV 435-6 [*LIV* einen Gedanken fassen]

Complex (E-grade root ?)

toimtiu OIr [***-ti-on-**] “thought, mention”

***seh₁-** EDPC 323-4; LIV 517-8 [*LIV* eindrücken, einsetzen -->säen]

Simplex (Zero-grade root)

saithe OIr [***-tjo-**] “swarm, throng, multitude”; *heyd* MW [***-ti-**] “swarm, flock, pack”

1.*seh₂(j)- EDPC 324; LIV 520-1 [*LIV* satt werden]

¹⁰¹ See, for example, Claudius Ptolemy’s *Geographica* 2.8.9 (Κονδάτε). A number of places had this name. One notable one is the city of Rennes in Brittany, France. The Latin name for Rennes was *Condate Redonum*. Rennes is located in the “confluence” of the two rivers, Ille and Vilaine.

The ending may reflect a suffix **-tā-*, although comparative data from other languages (e.g. Latin *satis*) points to a possible **-ti-* suffix.

Simplex (E-grade root)

sáth, sáith OIr “sufficiency, fill”

PC *siti- < ***seh₁-ti** or ***sh₁i-ti** < **1.*seh₁(i)-** EDPC 338; LIV 518 “Length” [*LIV* loslassen]

Simplex (Zero-grade root)

hit OW “length”

Complex (Zero-grade root)

sith- OIr “long”

***streu-** EDPC 357-8; LIV 605 [*LIV* streuen]

Simplex (Zero-grade root)

sruith OIr “old, venerable”; *strutiu* OW [**-ti-on-*] (glossed as *antiquam gentem*)

1.*teh₂- LIV 616 [*LIV* stehlen]

Simplex (E-grade root)

táid OIr “thief”

***telh₂-** EDPC 380; LIV 622-3 “Weak/sick” [*LIV* aufheben, auf sich nehmen]

The semantic development from “to pick up, accept” to “weak, sick” needs some explanation. Metasović (EDPC) sees two options: (1) “supporting” > “suppressed” > “weak”; (2) “support” > “suffer” > “be weak”. However, I would rule out a meaning of ‘to support’. Latin *tollō* ‘lift up, raise, take up, accept, bear, endure’ and Homeric Greek ἔτλην ‘I/they endured, suffered, dared’ suggests a metaphorical development of ‘pick up/carry’ > ‘endure’. Compare Modern English *to bear* which has the basic meaning of *to carry*, but has also developed the meaning of *to endure/suffer* (e.g. I can’t *bear* it any longer). Presumably the Celtic adjective originally had a meaning “enduring/suffering”.

Simplex (Zero-grade root)

tláith “weak, soft, feeble, pleasant, gentle” MIr; *tlawdd* MW “poor, sick”

***uelH-** EDPC 425-6; LIV 676-7 [*LIV* stark sein, Gewalt haben]

Simplex (Zero-grade root)

flaith OIr “sovereignty, ruler”; *gulat* OW “country”; *flaithem* OIr [***-ti-men-**] “ruler”

Denominal Roots

***uet-** EDPC 417; EDL 672-3 “Sow, young female pig” < “Year(ling)”

Simplex (E-grade root)

feis OIr “sow”; *gwys* MW “sow”

Doubtful Etymologies

***b^hris-** EDPC 78-9; See also DELL 231. “Hurry/haste”

This etymology seems doubtful, if connected to Lat. *festinō* “I hurry”, as we need to explain the loss of the ***r** in Latin.

Simplex (Zero-grade root)

brys MW

***h₂el-** EDPC 30; LIV 262 [*LIV* nähren, aufziehen]

All forms reflect a ***-tjo-** suffix. There is likely to have originally been a ***-to-** suffix.

Simplex (E or Zero-grade root)

altae OIr “fosterling/client” [***-tjo-**]; *eillt* MW “subject/vassal/unfree landholder” [***-tjo-**]

Complex (E or Zero-grade root)

comaltae OIr “foster-brother”; *cyfeillt* MW “friend”

***meh₂-** EDPC 259-60; LIV 425; EDL 367 “Good” [*LIV* Zeichen geben]

Michiel De Vaan in EDL connects this word to a Latin root meaning “ripe”: ***meh₂-tu-**. Under Matasović’s interpretation in EDPC we would need to see the following semantic development: “Zeichen geben” > “give a sign of approval” > “approve” > “that which is approved (and therefore good)”. There seems to be evidence of Celtic *tu*-stems of this root (e.g. OIr *math* “bear” (*ursus*) – supposedly a tabooistic replacement –and the Gaulish personal name *Matu-genos* “born of a bear”), which may align better with the Latin data –and consequently De Vaan’s interpretation. It is far from certain, however.

Simplex (Zero-grade root?)

maith OIr “good”; *mad* MW “fortunate, good”

***me_l(H)-tV-** Possible from ***meh₁-i-** EDPC 270; EDL 383; LIV 424-5 ? “Plump, fat” [*LIV* (ab)messen ?]

May in fact be a to-stem. The reconstruction of the laryngeal depends on whether a number of Balto-Slavic words (OCS *milъ* “dear”, Lith. *míelas* “dear”) are cognates. The connection with ***meh₁-i-** is discussed in EDL 383.

Simplex (E-grade root)

méth OIr

***mer-** or **2.*smer-** EDPC 258-9; LIV 439-40 or LIV 570 “A violent, sudden death, fattened cow for slaughter” [*LIV* verschwinden, sterben OR Anteil bekommen].

OIr should keep ***s** in an ***sm** cluster, so ***mer-** seems more likely. It is not entirely clear what stem this word possesses.

Simplex (Zero-grade root)

mart, mairt OIr

***preh₂t-** or ***h₂reh₃-** EDPC 139-40; LIV 272-3 [*LIV* aufbrechen, pflügen]

Note that ***preh₂t-** is not a recorded root in LIV. This particular etymology hinges on this word being related to Latin *prātum* “field”. If ***h₂reh₃-** “to plough/break up the soil” came to have the meaning “to dig”, we could fairly comfortably explain how this word could have the sense of “fort/rampart” on one hand, and “cemetery” on the other.

Simplex (Zero-grade root?)

ráth, ráith OIr “fort/rampart”; *ratin* (acc) Gaulish

Complex (Zero-grade root?)

Argento-rate Gaulish (Ancient name of Strasbourg) ‘(place with) silver ramparts’¹⁰²; *bedd-rawd* MW ‘cemetery’

***(s)kueh₁t-** perhaps EDPC 175; LIV 563-4 “chaff, husks” [*LIV* durchschütteln, aufrütteln]

If this is built on a root with a final ***t**, then this must have an ***-i-** suffix, not a ***-ti-** suffix.

Simplex (O-grade root?)

cáith OIr

¹⁰² Found in Claudius Ptolemy’s *Geographica* (2.9.9) as **Ἀργεντόρατον**, and in inscriptions, such as CIL 13.2.9082.

PC *truti- < PIE ***trusdo-** ? ‘Starling, thrush’ (Latin *turdus*, Engl. *thrush*) EDCP 392; See EDL 634-5 for discussion

Simplex (Zero-grade root)

truit, truid Mlr; *trydw* MW

PC *uāti- Possibly from ***ueh₂-** or ***h₁ueh₂-** EDCP 404; EDL 656 “Sooth-sayer, prophet”

Connected to Latin *vātēs* “prophet, seer”, and probably to the Germanic *Wōden* (OE)/*Óðinn* (ON) and other related words. There is a verbal root ***ueh₂-** which means “to turn”, and another ***h₁ueh₂-** which means “to surrender, to leave, to empty, and to end”. The Germanic forms often point to a verbal root meaning “raging” as well as “singing”, “sound”, and “poetry”. It is therefore hard to reconcile any of the verbal roots in LIV with any of these forms.

Simplex (E-grade root)

fáith OIr; *ouáteis* Gaulish (Strabo 4.4.4.)

***ueih₁-** EDCP 418; LIV 668-9 [*LIV* sein Augenmerk richten auf, trachten nach]

Matasović (EDCP) connects these words to a PIE root ***ueih₁-** meaning “to wind, weave”. LIV remains silent on such a root with this meaning, but suggests there is an identical form meaning “to focus one’s attention on, to strive after”. The Middle Welsh verb *gwyn-* has the meaning “to plunder”, and OCS *po-vinŋti* “subdue”, but there does not seem to be a connection with the meaning “to wind”. Matasović connects Sanskrit *vetasá-* “reed”, OHG *wīda* “willow”, Lith. *vytīs* “willow switch”, OCS *větvь* “branch”, and perhaps Latin *vītis* ‘vine’ to the Celtic forms. We might also add YAvest *vaēiti* “willow” (EWA 2:578-9). Given that the Sanskrit form preserves a ***t**, but not an ***i**, in the suffix. It is perhaps more likely that the Celtic forms are i-stems built on a t-stem, or a t final root.

Simplex (E-grade root)

féith OIr “a type of twining plant”; *gwden, gwyden* MW [***-ti-na**] “a withe”

***uel(t)-** EDCP 145-6; EDPG 579

These words have possible cognates in the Germanic adjective (e.g. Modern English *wild*, Gothic *wilþeis* “wild”, ON *villr* “wild”) which Kroonen (EDPG) believes would reflect a *io*-stem, ***uelt-jo-**. He also thinks it is possible that this word is related to PG ***walpu-** “field, uncultivated area, wood”

(EDPG 571-2), which provides OE *weald* “wood” and OHG *wald* “wood” (Mod German *Wald*). This is, he argues, a *tu*-stem created on the verbal root **uolH-*. If the verb and adjective are connected, then we should be able to rule out the final **t* in the root. Ultimately Kroonen labels the Celtic words as simple *i*-stems, not *ti*-stems, assuming the existence of a root with a final **t*. Metasović (EDPC) argues for no final **t*.

Simplex (E-grade root)

geilt Mlr “madman, crazy person living in the woods” ; *gwyllt* MW “wild, untamed, angry”

GERMANIC

GERMANIC INTRODUCTION

Most of the Germanic items are taken from Alfred Bammesberger’s *Die Morphologie des urgermanischen Nomens* (1990; henceforth abbreviated as MUN). A few others are taken also from Guus Kroonen’s *Etymological Dictionary of Proto-Germanic* (2013; henceforth abbreviated as EDPG) in the *Leiden Indo-European Etymological Dictionary Series*. I have included, following Bammesberger, data from the six oldest attested Germanic languages: Gothic (Goth); Old Norse (ON); Old English (OE); Old Frisian (OFris); Old Saxon (OS); and Old High German (OHG). I have frequently left words unglossed, although I always attach a gloss (German) from LIV for the verbal root behind each word. Sometimes, albeit rarely, I can draw no connection to a root in LIV, and consequently I just include the gloss from EDPG (English) or MUN (German).

The most significant difference between the Germanic branch and PIE is the operation of Grimm’s Law. This saw, under ordinary stress conditions, the chain-shift of voiceless stops to voiceless fricatives, voiced stops to voiceless stops, voiced aspirated stops to voiced unaspirated stops:

T>TH

D>T

DH>D

Since my thesis is dealing with the ***-ti-** suffix, which contains the voiceless (unaspirated) stop /t/, under regular conditions we would expect the resulting voiceless fricative /θ/. This is often the case, although there are a couple of exceptions:

(1) the ***-ti-** suffix follows a root with a final ***s** or dental stop. This results in the first instance in the retention of the ***t** as a /t/, and in the second instance results in a double /s/. This reflects the following changes: ***TT** > ***TsT** > Pre-PG ***Ts** > PG ***ss**.

(2) Verner's Law which states that the newly arisen voiceless fricatives and the inherited voiceless fricative ***s** are voiced following a stressed syllable. Verner's Law was in operation fairly late, as Gothic is spared this change. It is because of Verner's Law that we have some information regarding the original PIE accent.

The ***i** in the suffix likewise had ramifications in the various Germanic languages. This, by way of umlaut, or i-mutation, caused back vowels in previous syllables to be fronted. Again, this did not occur in Gothic. There were other vowel changes in sub-branches, such as Anglo-Frisian brightening, that can complicate reconstruction somewhat.

One change to various degrees that affected all the Germanic languages was shift from a mobile pitch accent to an initial stress accent. This resulted in loss or reduction of non-initial syllables. An exception to initial stress is found with the addition of prefixes. Typically they were unstressed, and consequently we see weakening of these prefixes (for example, the nearly total loss of the PG ***ga-** prefix in Old Norse).

GERMANIC DISCUSSION

In this dataset of 200 Germanic items I have 69 different roots. All of these seem to have a verbal origin, even if all of them cannot be directly reconstructed in PIE. 40 roots are attested with a zero-grade root, 14 with an e-grade, 7 with either an e or o-grade, 7 with an o-grade, and 3 with an a-grade. Of these zero-grades 25 are simplex, 28 are complex, including 13 that are both. Of the e-

grades 9 are simplex, 8 are complex, including 3 that are both. Of the e/o-grades 6 are simplex, 3 are complex, including 2 that are both. Of the o-grades 5 are simplex, and 2 are complex. Of the a-grades 2 are simplex, 2 are complex, including 1 root that attests both. As a whole, there are 57 attested simplex forms, 43 complex forms, including 19 forms with both. Two roots have simplex forms in one category, and complex forms in another. Among the 200 Ancient Germanic items in this dataset I have 126 simplex items and 74 complex. These findings seem to contradict those of von Bahder and Wackernagel, who both observed that the complex forms are much more common, as well as those by Rasmussen and Olsen. Not only is a verbal root more likely to be found as a simplex in Germanic, but also, even after you take into account the numerous ways a complex can be built, simplex forms still outnumber the complex ones.

GERMANIC DATA

***b^helg^h-** MUN 140; LIV 73-4 “Zorn” [*LIV* schwellen]

Complex (Zero-grade root)

gibuluht OHG

***b^her-** MUN 141; LIV 76-7 [*LIV* tragen, bringen]

Simplex (Zero-grade root)

berd OFris

Complex (Zero-grade root)

gebyrd OE “birth”; *giburd* OS; *giburt* OHG

***b^heug^h-** MUN 139; LIV 85-6 “Ransom” [*LIV* sich biegen]

Complex (Zero-grade root)

andabauhts Goth “ransom”

***b^hrs-** EDL 203-4 “Bristle”

See Sanskrit *bhr̥sti-* “point”, for example, which appears to come from ***b^hRenk'-** [*LIV* 95 abfallen].

Michiel De Vaan (EDIL 203-4) connects the Sanskrit and Germanic words with Latin *fastīgō* “to make pointed, taper”. It would be hard to accept ***b^hRenk'-** for the root of the Latin and Germanic words phonologically, because we would not expect a ***k'** to end up as an [s] in these languages. We

would expect a [ss] if the root had a final dental stop, which does not occur, so the root final consonant is almost certainly an *s. It seems attractive to connect the words semantically, although there would have had to have been some process happening which we don't currently understand. The assimilation of a palatovelar before *t itself is not particularly unusual (we see it in Sanskrit and Avestan, for example), but it almost certainly would have had to have occurred in a period before the merging of palatovelars with regular velars (i.e. PIE rather than Proto-Northern-IE, or before the centum-satem split).

Simplex (Zero-grade root)

byrst OE “bristle”; *burst, borst* OHG

***b^hreg⁽ⁿ⁾-** MUN 141; LIV 91-2 [*LIV* brechen (intr.)]

Complex (Zero-grade root)

wider-bruht OHG “contrariness, insubordination”

***deh₂(i)-** MUN 146; LIV 103-4 [*LIV* teilen]

Simplex (Zero-grade root and metathesis)

tīd ON “time, hour”; *tīd* OE “time, hour”; *tīd* OFris; *tīt* OS; *zīt* OHG

1.*dejk'- MUN 139; LIV 108-9 [*LIV* zeigen, weisen]

Simplex (Zero-grade root)

tiht OE “charge, offence with which one is charged”; *tiht* OFris

***der-** MUN 142; LIV 119-21 [*LIV* zerreißen (intr.), zerspringen]

Complex (Zero-grade root)

gataurps Goth “destruction”

***deuk-** MUN 140; LIV 124 [*LIV* ziehen]

Simplex (Zero-grade root)

tyht OE “way, manner of conducting oneself, usage, practice”; *zuht* OHG

Complex (Zero-grade root)

ustauhts Goth “performance, completion”; *āthum-zuht* OS

***d^heh₁-** MUN 146; LIV 136-8 [*LIV* stellen, legen, setzen; herstellen, machen]

Simplex (E-grade root)

dád ON; *dǣd* OE; *dēde* OFris; *dād* OS; *tāt* OHG

Complex (E-grade root)

gadeds Goth “deed”

***d^hers-** MUN 140; LIV 147 [LIV Mut fassen]

Simplex (Zero-grade root)

dyrst OE “tribulation”

Complex (Zero-grade root)

giturst OHG; *gedyrst* OE

?*d^hreib^h- MUN 139; LIV 155 [LIV treiben]

Simple (Zero-grade root)

dript ON “snow-drift, drifting”

Complex (Zero-grade root)

ur-drift OFris; *anatrif* OHG

2.?*d^hreug^h- MUN 140; LIV 157 [LIV Gefolgschaft leisten]

Simplex (Zero-grade root)

drótt ON “household, people; bodyguard of a king”; *dryht* OE “people, army”; *dreht* OFris; *truht* OHG

Complex (Zero-grade root)

gadrauhts Goth “soldier”; *drauhtiwitop* Goth; *druht-skepi* OS

?*d^hreus- MUN 140; LIV 157-8 [LIV fallen, herabfallen]

Complex (Zero-grade root)

usdrusts Goth “falling away, a rough way”

***g'enh₁-** MUN 141; LIV 163-5 [LIV erzeugen]

Complex (Zero-grade root)

gakunþs Goth “appearance, persuasion”; *gecynd* OE; *kikunt* OHG

***g'enh₁-** MUN 146; LIV 163-5 “Clan” [LIV erzeugen]

Simplex (O-grade root)

knops Goth “clan, stock”; *chnuot* OHG

***g'eus-** MUN 140; LIV 166-7 [*LIV* kosten¹⁰³]

Simplex (Zero-grade root)

cyst OE “choice, election”; *kest* OFris; *kust* OS; *kust* OHG

Complex (Zero-grade root)

gakusts Goth “test(ing), trial, proof”

***g^(h)leub^h-** MUN 140; LIV 190-1 [*LIV* ausschneiden, spalten]

Simplex (Zero-grade root)

cluft OHG

Complex (Zero-grade root)

geclyft OE “crack, split”; *gekleft* OFris

***g^heb^h-** MUN 142; LIV 193 [*LIV* fassen, nehmen; geben]

Simplex (E-grade root)

gipt ON “gift, good luck”; *gift* OE “gift, dowry”; *jeft* OFris; *gift* OHG

Complex (E-grade root)

fragifts Goth “giving away, espousal”

?*g^hreib^h- MUN 139; LIV 203 [*LIV* greifen]

Complex (Zero-grade root)

pigrift OHG “handful”

1.*g^uelH- MUN 145; LIV 207 [*LIV* quälen, stechen]

Simplex (E/O-grade root)

cwiold OE “plague, pestilence, destruction”

***g^uem-** MUN 141; LIV 209-10 [*LIV* (wohin) gehen, kommen]

Simplex (Zero-grade root)

cumft OHG

Complex (Zero-grade root)

gaqumþs Goth “assembly, synagogue”; *samkund* ON

?*g^uet- MUN 142; LIV 212 [*LIV* sagen]

¹⁰³ *Kosten* is somewhat ambiguous here. The intended meaning must be ‘to taste/try/enjoy’ rather than ‘to cost’, judging by the cognates in the various daughter languages.

Complex (E-grade root)

ga-qiss Goth “consent(ing)”; *and-cwiss* OE; *ge-cwiss* OE

***Hejk'-** MUN 143; LIV 223 [LIV sich aneignen]

*Simplex (O-grade root –but possibly E-grade if the laryngeal is *h₂ or *h₃)*

aihts Goth “property”; *āht* OE; *ēht* OS; *ēht* OHG

***h₁ei-** EDPG 8; LIV 232-3 “Isthmus” [LIV gehen]

Simplex (O-grade root)

eið(i) ON [***-tjo-**]

***h₁rei-** MUN 139; LIV 252 [LIV sich erheben]

Complex (Zero-grade root)

urrist Goth “resurrection”; *ǣrist* OE; *ur-rist* OHG

***h₂el-** MUN 144; LIV 262 [LIV nähren, aufziehen]

Simplex (E/O-grade root)

alds Goth “age, generation”; *old* ON “time, age”; *ield* OE

***h₂en-** EDPG 560; LIV 266 “Wave” [LIV schöpfen]

Kroonen reconstructs the suffix as ***-tih₂** (EDPG 560)

Simplex (Zero-grade root)

unnr, *uðr* ON; *ȳð* OE; *ūthia* OS; *undea* OHG

***h₂enh₁-** EDPG 560; LIV 267-8 “Storm” [LIV atmen]

The [st] ending suggests an s-extension of some sort to the root, or an original ***TT** cluster.

Simplex (Zero-grade root)

ȳst OE; *unst* OHG

***h₂erh₃-** MUN 144; LIV 272 [LIV aufbrechen, pflügen]

Simplex (E/O-grade root)

qrđ ON “crop, produce”; *ierp* OE “ploughing, tilling”; *art* OHG

Complex (E/O-grade root)

raef-erd OFris

***h₂meh₁-** MUN 146; LIV 279 [LIV mähen]

Complex (E/O-grade root)

ā-māt OHG

***h₂nek'-** MUN 142; LIV 282-4 [LIV erreichen]

Complex (Zero-grade root)

gnótt ON “abundance, plenty”; *genyht* OE “abundance, plenty”; *ginuht* OHG

***h₂uēks-** MUN 144; LIV 288-9 [LIV (heran)wachsen, groß werden]

Complex (O-grade root)

uswahsts Goth “growth, increase”; *giwahst* OHG

2.*h₂ues- MUN 143; LIV 293-4 [LIV (ver)weilen, die Nacht verbringen]

Simplex (E-grade root)

wists Goth “being, existence”; *vist* ON; *wist* OE “being, subsistence, sustenance, eating”; *wist* OHG

***h₃orb^h-** EDPG 33 [EDPG to separate and reassociate oneself with/to change sides]

This root seems to be built on top of an ***-oj-** suffix (***h₃orb^h-oj-ti-**)

Simplex (O-grade root)

arbaiþs Goth “work, toil, labour”; *erfiði* ON; *earfoð* OE; *arbēd/arabid* OS; *arabeit* OHG

***h₃neh₂-** MUN 144; LIV 302-3 [LIV genießen]

Reflexes suggest an ***-(s)-ti-** suffix. This could be built on an s-stem, or the [s] could be a result of a

TT** cluster (>TsT** > **sT**).

Simplex (E/O-grade root)

ansts Goth “favour, grace”; *ást* ON “love, affection”; *ēst* OE “will, consent, grace, favour”; *anst* OS; *anst* OHG

Complex (E/O-grade root)

ab-unst OHG

***ies-** MUN 142; LIV 312-3 [LIV sieden, schäumen]

Simplex (E-grade root)

gist OE “yeast”

***k'eid-** MUN 144; LIV 321 [LIV rufen]

Simplex (O-grade root)

hǣs OE “command, hest, behest”

***keh₂p-** MUN 145; LIV 344-5 [*LIV* fassen, schnappen]

Complex (Zero-grade root)

andahafts Goth “answer”

?*kreh₂- EDPG 258; LIV 367 “Wickerwork door” [*LIV* aufhäufen, sammeln]

Simplex (Zero-grade root)

haurds Goth “door”; *hurð* ON “door”; *hurth* OS “wickerwork, hurdle”; *hurt, hurd* OHG
“hurdle, grate, railing”; *hyrdel* OE [***-ti-lo-**] “frame of intertwined twigs or bars”

***k^ʷerpH-** MUN 140; LIV 392-3 [*LIV* sich wenden]

Simplex (Zero-grade root)

hwyrft OE “turn, revolution, going, course, circuit, orbit”

Complex (Zero-grade root)

umbi-wurft OHG

***lejs-** MUN 139; LIV 409-10 [*LIV* lernen, erfahren]

Simplex (Zero-grade root)

lists Goth “craftiness, skill”; *list* ON; *list* OE; *list* OFris; *list* OS; *list* OHG

***leuH-** MUN 140; LIV 417 [*LIV* abschneiden, lösen]

Complex (Zero-grade root)

fralusts Goth “loss, perdition”; *farlust* OS; *forlust* OHG

***mag^h-** MUN 145; LIV 422 [*LIV* können, imstande sein]

Simplex (A-grade root)

mahts Goth “power, might, virtue, miracle”; *miht* OE; *meht* OFris; *maht* OS; *maht* OHG

1.*men- MUN 141; LIV 435-6 [*LIV* einen Gedanken fassen]

Complex (Zero-grade root)

gamunds Goth “remembrance”; *gemynd* OE; *gimunt* OHG

1.*nem- MUN 142; LIV 453 [*LIV* zuteilen]

Simplex (Zero-grade root)

numft OHG

Complex (Zero-grade root)

anda-numts Goth “acceptance, reception”

***nes-** MUN 143; LIV 454-5 [LIV davonkommen, unbeschadet heimkehren]

Simplex (E-grade root)

ganists Goth “salvation, health”; *ginist* OS; *genist* OHG

1.*per- MUN 144; LIV 472 [LIV hindurchkommen, durchqueren]

Simplex (O-grade root)

ferd ON “journey, conduct, behaviour”; *fyrð* OE “army, expedition, camp”; *ferd* OFris; *fard* OS; *fart* OHG

Complex (Zero-grade root –Bammesberger (MUN 144) says that the zero-grade comes from the tu-stems)

gafaurds Goth “chief council”

?*pleuk- MUN 140; LIV 488, but see 487 [LIV schweben, schwimmen]

LIV takes this root as a k-extension of ***pleuk-** [schwimmen, schweben], which occurs only in Germanic and Baltic. Middle Dutch *vluycen* ‘to transport over water’ preserves the original idea of “to float (on water)” –as does the Lithuanian k-extended cognate, *plaũkti* “he/she/it sails/swims” (see EDPG 146). It seems elsewhere that Germanic has developed the meaning “to float on water” > “to float in the air” > “to fly”.

Simplex (Zero-grade root)

flyht OE “flight”

?*pslek- MUN 143; EDPG 397 “Responsibility” [EDPG to take responsibility/to run a risk]

Simplex (E-grade root)

pliht OE “danger, damage”; *plicht* OFris; *fliht* OHG

***seh₁-** MUN 146; LIV 517-8 [LIV eindrücken, einsetzen -> säen]

Simplex (E/O-grade root)

sāt OHG

Complex (E-grade root)

manaseþs Goth “man-sown/seed, seed of man”

***seh₂g(-)** MUN 145; LIV 520 [LIV einer Fährte nachgehen]

The original meaning of this root “to go after a trail” is seen in Gothic *sokjan* “to seek”, but Gothic also attests *sakan* “to rebuke, dispute”. Hittite *sākiya-mi* “I reveal” and Latin *sāgiō* “I perceive quickly/keenly” are also supposed to be cognates. LIV states that the original meaning of Gothic *sakan* was ‘to undertake a (legal) investigation, or to snoop’. Gothic *gasahts* seems to be more or less a *nomen actionis* of the Gothic verb *sakan*. OE *seht* could potentially be considered a result noun meaning “that which was sought (and found)” –in a legal situation this might be a “settlement” or an “agreement”. Gothic *insahts* and IE *insiht* are more obscure to me. The OE occurs as a gloss of the title in the preface of the Gospel of John.¹⁰⁴ It is a translation of Latin *argumentum*.

Simplex (Zero-grade root)

seht OE “settlement (of a dispute), reconciliation, agreement”

Complex (Zero-grade root)

gasahts Goth “reproof”; *insahts* Goth, *insiht* OE “account, narrative, argument”.

1.*sek^u- MUN 143; LIV 525-6 [*LIV* sich anschließen]

The original meaning of “to follow” is clear is Greek ἑπομαι, Latin *sequor*, and Sanskrit *sácate* “he/she accompanies”. Kroonen (EDPG 431-2) argues that the meaning in Germanic must have developed from “to follow” to “to keep an eye on”.

Complex (E-grade root)

gisiht OHG “appearance, looks”

***seuk^k-** MUN 140; EDPG 490 [*EDPG* to be ill]

Simplex (Zero-grade root)

sauhts Goth “sickness, disease”; *sótt* ON; *sehta* OFris; *suht* OS; *suht* OHG

Complex (Zero-grade root)

ut-siht OE

***skab^h-** ? MUN 145; EDPG 440 and LIV 549 [*LIV* kratzen, schaben]

Complex (probably an a-grade root)

¹⁰⁴ Rev. Walter W. Skeat, *The Gospel according to Saint John: in Anglo-Saxon and Northumbrian versions synoptically arranged, with collations exhibiting all the readings of the MSS.* (1878).

gaskafits Goth “creation, creature”; *ufar-skafits* Goth “first fruit”; *gesceaft* OE; *giscraft* OS; *giscraft* OHG

1.?(s)kel- MUN 142; LIV 552 [LIV schuldig werden]

Simplex (Zero-grade root)

skyld ON “tax/duty”; *scyld* OE “blame/debt”; *skelde* OFris; *skuld* OS; *sculd* OHG

?*slak- MUN 145; LIV 564 [LIV schlagen]

Simplex (A-grade root?)

slauhts Goth “slaughter”

Complex (A-grade root?)

wæl-slyht OE “slaughter in battle”; *man-slaht* OHG

***sp^heh₁-** MUN 146; LIV 584 [LIV wunschgemäß geraten, gelingen]

Simplex (E-grade root)

spēd OE “speed, success, means, abundance, wealth, power, opportunity”; *spōd* OS; *spuot* OHG

***steh₂-** for the simplex forms and ***steh₂-T-** for the complex Gothic form MUN 145; EDPG 472; LIV 590-2 [LIV wohin treten, sich hinstellen]

Simplex (Zero-grade root) “place, town”

staþs Goth “place, neighbourhood”; *staðr* ON; *stede* OE; *sted* OFris; *stad* OS; *stat* OHG

Complex (Zero-grade root) ***steh₂-T-**

af-stass Goth “standing off, falling off/away”

***(s)teig^h-** EDPG 479; LIV 593-4 [LIV steigen, schreiten]

Simplex (Zero-grade root)

stétt ON “pavement, stepping-stones, degree/rank, order, condition”

1.*suer- MUN 145; LIV 613 [LIV tönen]

Complex (O-grade root)

āþ-swyrð OE “(sword)oath”; *eid-swart* OHG

***telh₂-** MUN 142; LIV 622-3 [LIV aufheben, auf sich nehmen]

Complex (Zero-grade root)

geþyld OE “patience, resignation”; *githuld* OS; *gidult* OHG

1.*terp- MUN 141; LIV 636 [LIV sich sättigen]

Simplex (Zero-grade root)

þaurfts Goth “need, necessity, distress”; *thurft* OS; *durft* OHG

***treip-** MUN 139; EDPG 547 [*EDPG* to seize]

Simplex (Zero-grade root)

Þrift ON “thriving condition, well-doing, prosperity”

2.*xerg'- MUN 141; LIV 686-7 [*LIV* wirken, machen]

Complex (Zero-grade root)

frawaurhts Goth “evil-doing, sin, sinner”; *uswaurhts* Goth “right, just”; *forwyrht* OE;
farwurht OS

***ueb^h-** MUN 143; LIV 658 [*LIV* umwickeln, weben]

Simplex (E-grade root)

wift OE “an implement used in weaving”

Complex (E-grade root)

gewift OHG

***xed^h-** MUN 143; LIV 659 [*LIV* führen]

Complex (E-grade root)

gawiss Goth “touch, contact, joining, joint”

***xeg^h-** MUN 143; LIV 661-2 [*LIV* schweben; fahren]

Simplex (E-grade root)

vætr ON “being, thing”; *wiht* OE “creature, being, thing”; *wicht* OFris

***ureg-** MUN 143; LIV 697 “Vergeltung” [*LIV* einer Spur folgen]

Complex (E-grade root)

geriht OHG “retaliation, revenge, reprisal”

GREEK

GREEK INTRODUCTION

My Greek data comes from a relatively small corpus (compared to my Indo-Iranian data at least). I chose to stick to the *Iliad* and *Odyssey* of Homer, and to Mycenaean, which represent the

oldest attested stages of Greek. If I were to investigate further, I would look also at the corpora of Hesiod and the oldest Iambic, Elegiac, and Lyric poets. I have used Ernst Risch's useful *Wortbildung der homerischen Sprache* (1974, 2nd Edition) for a comprehensive list of ti-stems in Homer. I refer frequently to the 1960 edition (two volumes) of *Griechisches etymologisches Wörterbuch* (henceforth GEW) by Hjalmar Frisk, and once to Robert Beekes' *Etymological Dictionary of Greek* (2010 – henceforth EDG) in the *Leiden Indo-European Etymological Dictionary Series*. As usual, I refer to *Lexicon der indogermanischen Verben* (2001 –LIV) by Helmut Rix, to the two volumes of *Lexikon der indogermanischen Partikeln und Pronominalstämme* (2014 –henceforth LIPP) by George E. Dunkel, and to *Nomina im indogermanischen Lexikon* (2008 –henceforth NIL) by Dagmar S. Wodtko, Britta Irslinger, and Carolin Schneider. Finally my one piece of Mycenaean data was taken from the *Handbuch des mykenischen Griechisch* (2003) by Antonin Bartoněk.

In theory Greek is valuable for what it tells us about PIE vowels as it keeps the original state of the vowels with or without the laryngeals. However, in practice there are still many uncertain cases where the vowel is not clear –mostly because the reflexes of the syllabic resonants followed by laryngeals are not clear and appear to fluctuate under different stress/pitch conditions.

GREEK ANALYSIS

This data set contains 55 items in total, which are made up from 42 different roots (all verbal in origin except for 1: ***der-**). 25 of these items are complex, and the remaining 30 are simplex. 6 of the 24 roots form both simplexes and complexes, 12 of the roots form just complexes, 24 of the roots form just simplexes). All the Homeric and Mycenaean Greek data suggests that it was more common to derive ti-stems within simplex forms, contrary to Wackernagel, von Bahder, and Rasmussen and Olsen.

Although there are many uncertainties, 26 of the roots make ti-stems with zero-grade roots, 5 make ti-stems with e-grade roots, 10 make ti-stems with highly uncertain roots, and 1 makes a ti-stem with an o-grade root. This confirms the idea that zero-grade is the most numerous root grade for ti-stems.

GREEK DATA

1.*b^heh₂- GEW 2:982-4; LIV 68-9 [LIV glänzen, leuchten, scheinen]

Complex (Zero-grade root, preverb accent)

πρόφασις “profession, declaration”

2.*b^heh₂- GEW 2:1009-10; LIV 69 [LIV sprechen, sagen]

Simplex (Zero-grade root, root accent)

φάτις (without assibilation) “talk, report, rumour”

Complex (Zero-grade root, preverb accent)

παραίφασις “persuasion”; πάρφασις “persuasion”

1.*b^heug- GEW 2:1005-7; LIV 84 z [LIV entfliehen, freikommen]

Simplex (Zero-grade root, root accent)

φύξις “flight, escape”

***b^hueh₂-** GEW 2:1052-4; LIV 98-101 [LIV wachsen, entstehen, werden]

Simplex (Zero-grade root, root accent)

φύσις “nature, quality”

***deh₃-** GEW 1:388-9; LIV 105-6 [LIV geben]

Simplex (Zero-grade root, root accent)

δόσις “gift, loan”

Complex (Zero-grade root, accent unknown?)

a-pu-do-si ([/apudosis/]Mycenaean for ἀπόδοσις “giving back, restitution, return”)

***demh₂-** GEW 1:346; LIV 116-7 [LIV zähmen, bändigen, gefügig machen]

Simplex (Zero-grade root(?), root accent (?))

δμησις “control, handling”

***g^henh₁-** GEW 1:306-8; LIV 163-5 [LIV erzeugen]

Simplex (Zero-grade root, root accent)

γένεσις “source, origin”

***g^heh₁-** GEW 2:1077-8; LIV 173 [LIV zurücklassen]

Simplex (E-grade root, root accent)

χήτει “want, lack” (possibly an s-stem)

***g^heu-** GEW 2:1090-3; LIV 179 [LIV gießen]

Simplex (Zero-grade root, root accent)

χύσις “collection, mass heap of scattered objects”

***g^heh₂-/*g^hem-** GEW 1:209-10; LIV 205, 209 [LIV den Fuß aufsetzen, treten/(wohin) gehen, kommen]

Complex (Zero-grade root, preverb accent)

ἀμφίβῃσις “defence of a fallen body”; ἑκβῃσις “a means of escape from something”;
πρόβασις “cattle, flock, herd”.

***g^heh₃-/*g^heh₃-u-** GEW 1:253-4; NIL 189-95 [NIL Futter]

Simplex (Zero-grade root, root accent)

βόσις “food”

***g^helh₁-** GEW 1:215-7; LIV 208 [LIV treffen, werfen]

Complex (Zero/E-grade root, preverb accent)

ἀνάβλησις “delay, respite”

***g^herh₃-** GEW 1:256; LIV 211-2 [LIV verschlingen]

Simplex (Zero/E-grade root, root accent)

βρῶσις “food, partaking of food”

Complex (Zero/E-grade root, first element accented)

βούβρωστις (unexplained sigma) “insect that attacks cattle (*lit.* cow-eating)”

***H₁eh₁-** GEW 1:714-5; LIV 225 [LIV werfen]

Complex (Zero-grade root, preverb accent)

ξύνεσις “a confluence or joining (of waters)”

***h₁ed-** GEW 1:16, 2:318; NIL 208-20; LIV 230 [LIV (beißen >) essen]

Complex (Zero-grade root (?), first element accented)

ἄγρωστις “Dog’s Tooth Grass (*Lit.* Field-eating) *Cynodon Dactylon*”; (ἀν-)νήστις “without eating, fasting”

***h₂erh₃-** GEW 1:147-8; LIV 272-3 [LIV aufbrechen, pflügen]

Simplex (Zero-grade root (?), root accent)

ἄροσις “arable land”

- *h₂leks-** GEW 1:68-70; LIV 278 [LIV abwehren, schützen]
Simplex (Zero-grade root, root accent)
 ἄλκηστις (name)
Complex (Zero-grade root, preverb accent)
 ἔπαλξις “a breastwork of planks”
- *h₂leu-** GEW 1:80-1; LIV 278 [LIV fernhalten]
Complex (Zero-grade root, root accent)
 ὑπάλξις “the possibility, or means, of escape”
- *h₃ekʰ-** GEW 2:407-8; LIV 297-8 [LIV ins Auge fassen, erblicken]
Simplex (Zero-grade root, root accent)
 ὄψις “exercise of the power of vision; the fact of seeing something, sight; appearance, outward seeming”
- *h₃neh₂-** GEW 2:395-6; LIV 302-3 [LIV genießen]
Simplex (E-grade root, root accent)
 ὄνησις “good, profit”
- *kleh₁-** GEW 1:762-3; LIV 361-2 [LIV rufen]
Complex (Zero/E-grade root, preverb accent)
 ἐπὶ κλησις “name”
- *kneh₂-** GEW 1:880-1; LIV 365 [LIV schaben, reiben]
Simplex (Zero/E-grade root, root accent)
 κνήστις (unexplained sigma) “a grater, instrument for grating”
Complex (Zero/E-grade root, preverb accent)
 ἄκνηστις (unexplained sigma) “spine, backbone”
- 1. or 3.*kʰej-** GEW 902-3/906-7; LIV 377-8/379-80 [LIV wahrnehmen, bemerken/Buße entgegennehmen, strafen]
Simplex (Zero-grade root, root accent)
 τίσις “repayment, indemnity; retribution, vengeance, chastisement”
- *kʰues-** GEW 2:56; LIV 341 [LIV schnaufen, schnauben, seufzen]
Simplex (Zero-grade root, root accent)

κύστις “bladder”

?*leh₂d^h- GEW 2:80-2; LIV 401-2 [LIV vorborgen bleiben]

Complex (Zero/E-grade root, preverb accent)

ἐκλήσις “a forgetting, amnesty”

*leuH- GEW 2:149-50; LIV 417 [LIV abschneiden, lösen]

Simplex (Zero-grade root, root accent)

λύσις “a releasing or ransoming; a means of release from the toils of something, a means of escape”

*meh₁- GEW 2:232-3; LIV 424-5 [LIV (ab)messen]

Simplex (E-grade root, root accent)

μητις “skill, address; skill in counsel or device, astuteness, shrewdness; contrivance, scheming; counsel; course of action, scheme; intention, purpose; faculty of deliberation”

Complex (E-grade root, first element accent)

δολόμητις “crafty of counsel, wily”; πολύμητις “of many counsels or devices”

1.*men- GEW 2:238-41; LIV 435-6 [LIV einen Gedanken fassen]

Simplex (Zero-grade root, root accent)

μνησις (unexplained sigma and eta) “a bearing in mind; thought or care for something”;
μάντις (without assibilation) “a seer or diviner”

*mes- GEW 2:182-3; LIV 441 [LIV den Arm ausstrecken]

Simplex (Zero-grade root (?), root accent)

μάστι “a whip, lash”

1.*nem- GEW 2:302-4 ;LIV 453 [LIV zuteilen]

Simplex (Zero-grade root, root accent)

νέμεσις –έσσι “righteous indignation or vexation, blame, censure, reproach; something worthy of righteous indignation or of blame, censure, or reproach”

*peh₂(i)- GEW 2:584; LIV 460 [LIV schützen, hüten, weiden (tr)]

Simplex (Zero-grade root (?), root accent)

πόσις (m) “a husband”

*peh₃(i)- GEW 2:585; LIV 462-3 [LIV trinken]

Simplex (Zero-grade root, root accent)

πόσις (f) “a drink”

***per-k-** GEW 1:589-91; EDG (vol 2)1229-30; LIV 472-3 [*LIV* hindurchkommen, durchqueren]

Simplex (Zero-grade root (?), root accent)

πρῆξις “accomplishment, result, issue; affair or business”

***pneṽ-** GEW 2: 556-7; LIV 489 [*LIV* hauchen, keuchen]

Complex (E-grade root, preverb accent)

ἀνάπνευσις “a breathing-space, a respite”

***seg^h-** GEW 1:602-4; LIV 515-6 [*LIV* überwältigen, in den Griff bekommen]

Complex (Zero/E-grade root, preverb accent)

ἐπίσχεσις “holding back, reluctance, hesitation”; υπόσχεσις ‘a promise, undertaking, engagement”

***senh₂-** GEW 1:115; LIV 532-3 [*LIV* erlangen, erwischen]

Simplex (Zero-grade root, root accent)

ἄνυσις (possibly influenced by verbs in –νυ-) “accomplishment, effect, result”

***(s)kedh₂-** GEW 2:721; LIV550-1 [*LIV* zersplittern, zerstreuen]

Simplex (E-grade root, root accent)

σκέδασις “a (disorderly) scattering, a rout”

1.*tek- GEW 2:31-3; LIV 618-9 [*LIV* die Hand ausstrecken, empfangen, erlangen]

Simplex (Zero/E-grade root, root accent (?))

κτηῖσις “possessions, goods, effects, property, wealth, chattels, things”

***temh₁-** GEW 2:874-6; LIV 625 [*LIV* schneiden]

Complex (Zero/E-grade root, preverb accent)

πρότμησις “the navel” (*lit.* “the cut in front”)

***ṽeih₁-** GEW 1:747-8; LIV 668-9 [*LIV* sein Augenmerk richten auf, trachten nach]

Complex (O-grade root (?), preverb accent)

παλίωξις “a pursuit back, a retreat”

***ṽerh₁-** GEW 1:469-71; LIV 689-90 [*LIV* sagen]

Simplex (Zero/E-grade root, root accent)

ῥῆσις “discourse, talk”

UNCERTAIN ETYMOLOGY

ἄντησις GEW 1:113 (Complex. Root grade unclear) “Confronting, opposition”

IRANIAN

IRANIAN INTRODUCTION

My Iranian data (Old and Young Avestan, and Old Persian) is taken from *Altiranisches Wörterbuch* (1904) by Christian Bartholomae. The book has a useful set of indices at the back, where all the nominal items are presented alphabetically by ending. Bartholomae uses a different transliteration system from later Avestan scholars, and there may be times where one of my items is in the old format –I have tried for the most part to update them. Avestan is not quite as well served as Vedic for etymological reference works. Vedic has Manfred Mayrhofer’s 3 volume *Etymologisches Wörterbuch des Altindoarischen* (1992 –henceforth EWA). Avestan has the *Etymological Dictionary of the Iranian Verb* (2007 –henceforth EDIV) by Johnny Cheung in the *Leiden Indo-European Etymological Dictionary Series*. Considering the similarities between the Old Iranian languages and Vedic, EWA often compares Vedic data to Avestan and Old Persian data. Therefore I have frequently made use of EWA. As always, I use *Lexikon der Indogermanischen Verben* (2001 –henceforth LIV) by Helmut Rix, the two volumes of *Lexikon der indogermanischen Partikeln und Pronominalstämme* (2014 –henceforth LIPP) by George E. Dunkel, and to *Nomina im indogermanischen Lexikon* (2008 –henceforth NIL) by Dagmar S. Wodtke, Britta Irslinger, and Carolin Schneider. Several times in the section on numerals I refer to Michael Weiss’ *Historical and Comparative Grammar of Latin* (2011 - 2nd corrected printing).

On the whole, Avestan (and to a lesser extent Old Persian) is very similar to Vedic, although there are a number of phonological changes. While Vedic texts records accents, Avestan texts do not, although there are times when we can infer the accent from orthographical irregularities. As with all

the Indo-European languages, the biggest barrier to phonological reconstruction is the syllabic resonant and laryngeals (particularly in combination).

IRANIAN DISCUSSION

My Iranian data is fairly complex. It includes 693 different ti-stems attested from Avestan (Young and Old) and Old Persian (the vast majority are Avestan). My dataset attests approximately 148 different PIE verbal roots, 7 numeral roots, 7 particle/adverbial roots, and perhaps another 40 roots that are poorly understood. There are 480 items in the sorted verbal category, 62 in the unsorted –or without etymology – category, 128 in the particle/adverb category, and 23 in the numeric category. Of the 148 roots attested, 29 roots are only attested with simplex forms, 61 with only complex forms, and 58 with both. Of the 480 verbal items, 367 are complexes and 113 are simplexes. Considering the prolific use of certain preverbs, nouns, and adjectives in Iranian compounds, this is hardly a surprising figure. There are 15 complex ti-stem items, besides particles (e.g. *pati-*), that are found as the first element of the compound.

With the merger of PIE **e*, **o*, and **a* vowels in Indo-Iranian, there are certainly some major challenges when reconstructing ablaut grades. Often it is impossible to decide whether there was an **e* or **o* vowel unless there is evidence of Brugmann’s Law (PIE **o* in open syllables becomes *PIIr* **ā*). For this reason only 3 roots in my dataset can definitely be said to reflect an **e* vowel (e-grade root). 53 roots have either an **e* or **o* vowel (e/o-grade root). 95 roots attest a zero-grade root, 1 has a lengthened root as a member of the *vrddhi patronymicus* class. There is not enough information to determine the ablaut grade for 5 of the roots, and there are 8 roots that have two different root ablauts, and 1 that has 3. There is certainly a strong tendency for Iranian ti-stems to be compounds and to have a zero-grade root, although this is not entirely surprising considering the high levels of compounding in Indo-Iranian (especially compared with many other Indo-European branches).

IRANIAN DATA

***b^heh₂- (1)** EWA 2:259-60; LIV 68-9

[LIV glänzen, leuchten, scheinen]

Complex (Zero-grade root)

vivitay “Aufleuchten”

***b^her-** EWA 2:246-9; LIV 76-7 [LIV tragen, bringen]

Simplex (Zero-grade root)

bārəθe INF; *bārəθi* INF

Complex (Zero-grade root)

vantā.bārətay “Darbringung von Huldigungen”; *ušta.bārətay*; *hu.frabārətay*; *aš.frabārətay*; *aēsmō.bārətay* ; *hu.bārətayhqm.bārətay*; *vāxš.bārətay*; *nižbārətay*; *ainižbārətay*; *upa.bārətayaē-ča* INF; *araθwyō.bārəte* INF; *niž.bārətāe* INF; *dužbārətāe* INF; *paiti.bārətay*

***b^heqd^h-** EWA 2:233-5; LIV 82-3 [LIV wach werden, aufmerksam werden]

Complex (Zero-grade root)

apaiti.busti (adv.) “unvermerkt”

***b^hueh₂-** EWA 2:255-7; LIV 98-101; [LIV wachsen, entstehen, werden]

For an alternative etymology see EWA 2:270-1.

Simplex (Zero-grade root)

būštay “Werden; (pl) die werdenden, künftigen Dinge”

***deh₃-** (although it would be hard to rule out ***d^heh₁-** as well in some contexts) EWA 1:713-5; LIV 105-6 [LIV geben]

Simplex (E or O grade root)

dāitya [***-tjō-**]; *dāitīm* ABS; *dātay* “Geben, Schenken, Gewährung”; *dastē* INF (reduplicated root); *dāiti* INF

Complex (E or O grade root)

dāityō.kərəta [***-tjō-**]; *van̄hudātayana*; *dāitya.yaona* [***-tjō-**]; *dāityō.təma* [***-tjō-**]; *adāitya* [***-tjō-**]; *dāityō.piθwa* [***-tjō-**]; *adāityō.arəharəθra* [***-tjō-**]; *dāityō.baoḍay* [***-tjō-**]; *dāityō.gātav* [***-tjō-**]; *dāityō.draonah* [***-tjō-**]; *adāityō.draonah* [***-tjō-**]; *zrazdātay* “Name of a believer”; *yaoždāitīm* ABS; *aḍwadātay*; *rāmō.dātay*; *frāšmō.dātay*; *aitidatay*; *aiβiḍātay*; *niḍātay*; *vīdatay*; *handātay*; *zrazdātay*; *yaoždātay*; *ayaoždātay*; *anabdātay*; *duž.dātay*; *gayadāstay* “Name of a believer (life-giver (?))”; *adāityō.arəharəθrəm* [***-tjō-**]; *fradaθāi* INF; *frāḍāiti-ča* INF; *frāḍāiti* INF; *yaoždāiti* INF

Complex (Zero-grade root)

paityāstayae-ča INF; *paityāstay*

1.*dejk'- EWA 1:744-6; LIV 108-9 [LIV zeigen, weisen]

Complex (Zero-grade root)

ādištay “Anweisung (EWA)”

***dek^(u)s-** LIV 112 “Name of a believer (teacher)” < “teaching” [*LIV* zeichnen]

Complex (Lengthened grade root)

fraḍāxštay; pouruḍāxštay (both names of believers, and both probably *vrddhi* patronymics)

***derk'-** EWA 1:704-6; LIV 122 “Looking” [*LIV* hinblicken, erblicken]

Simplex (E or O grade root)

darštōiš (stem?) INF

Complex (Zero-grade root)

aiβī.darəštay “conspectus”

***deu_h2-** EWA 1:738; LIV 123 [*LIV* zusammenfügen]

Simplex (Zero-grade root)

dūtya [*-tjō-] “Botschaft”

***d^heh₁-** EWA 1:783-7; LIV 136-8 [*LIV* stellen, legen, setzen; herstellen, machen]

Complex (Zero-grade root)

tarōidītay “Beiseiteschaffen, Verdrängung, Überwindung”; *nidaiθyqn* INF

***d^heiH-** EWA 1:777-8; LIV 141-2 [*LIV* ins Auge fassen]

Complex (Zero-grade root)

paiti.dītay “das Treffen mit dem Blick, Erblicken”

***d^hen-** EWA 1:773-4 “Bow (weapon)” -possible contamination of initial consonant from
***t^heng^h-**

Simplex? (E/O-grade root)

θanvarətay

***d^hreug^h- (1)** EWA 1:760-1; LIV 157 [*LIV* trügen, täuschen]

Complex (Zero-grade root)

anādruxtay “Nichtlügen”; *anaiβi.druxtay; aiβi.druxtāe* INF

***g'enh₁-** EWA 1:567-8; LIV 163-5 [*LIV* erzeugen]

Simplex (Zero-grade root ?)

zazāite (reduplicated root) INF

Complex (E/O-grade root)

frazaintivant [*-ti- ɣ ent-]; *āzaintivant* [*-ti- ɣ ent-]; *vispahuzatay* (zero-grade?); *frazantay* “Nachkommenschaft, Kinder”; *afrazantay*; *ašava.frazantay*

***g'euH-** EWA 1:580-1; LIV 166 [LIV sich in schnelle Bewegung setzen]

Complex (Zero-grade root)

uzutay (adj.) “hervoreilend, -sprudelnd”

***g'neh₃-** EWA 1:599-601; LIV 168-70 [LIV erkennen]

Simplex (E/O-grade root?)

zantay

Complex (E/O-grade root?)

pouru.āzantay; *maṭ.āzantay*; *paiti.zantay*

***g^(h)end^h-** EWA 1:461-2; EDIV 103-4

Although attested in Indic as well as Iranian, Johnny Cheung (EDIV) views this root as non-Indo-European.

Simplex (Root? E/O-grade)

gantay “übler Geruch, Gestank”

Complex (Root?E/O-grade)

dužgainti.tāma; *viš.gaintaya*; *dužgainti.tara*; *dužgantay*

***g^heu-** EWA 2:808-9; LIV 179; EDIV 471-2 [LIV gießen]

This root in Indo-Iranian can have the meaning “to sacrifice” and well as “to pour”.

Complex (Zero-grade root)

āzuⁱti.dā ADJ “(Fett sva.) Üppigkeit, strotzende Kraft und Fülle schenkend”; *āzuⁱṭay* “Opferfett, Opferbutter”

***g^hueH-** EWA 2:809-11; LIV 180-1 [LIV rufen]

Simplex (Zero-grade root)

zūtay “Ruf, Anruf”

Complex (Zero-grade root)

vizutay

Complex (E/O-grade)

nqma.azbātay ‘Anrufung (einer Gottheit) mit dem Namen’

***g^hed^h-** EWA 1:460-1; LIV 195 “Robber, bandit” [*LIV* (zusammen)treffen, sich vereinigen]

The Indo-Iranian root *gadh-* “ergreifen, festhalten, erbeuten” is likely to be connected to this PIE root, although there is a slight change in semantics from “come together, merge” > “to seize, capture”, which would need some explaining. Semantically the Indo-Iranian root is closer to PIE ***g^hed-** [*LIV* 194 fassen], but the final aspirated ***d^h** is fairly clear. Grassmann’s Law accounts for the deaspirated [g].

Simplex (E/O-grade root)

gaδōtay [*-o-ti]

***g^hrebh₂-** EWA 1:505-7; LIV 201 [*LIV* ergreifen]

Complex (Zero-grade root)

vīgārāptay ‘Ergreifen, Gefangennahme, -schaft’

***g^uem-** EWA 1:465-6; LIV 209-10 [*LIV* (wohin) gehen, kommen]

Simplex (Zero-grade root)

gatāe INF

Complex (Zero-grade root)

aiβi.gatay; hangatay; fraigatay; apagatāe INF

***g^uerH-** EWA 1:468-9; LIV 210-1 [*LIV* Bestimmung bekunden]

Simplex (Zero-grade root)

jarāy (meaning uncertain)

Complex (Zero-grade root)

aiβijarāy ‘Preisen, Preisgesang’

***g^uiēh₃-** EWA 1:467-8; LIV 215-6 [*LIV* leben]

Simplex (E/O-grade root for the first two and Zero-grade for the last)

gaēθya [*tyo]; *gaēiθya* [*tyo]; ; *jītay*;

Complex (E/O-grade root for -jyātay forms, Zero-grade for all others)

aijyātay; darəgō.jyātay; huḷyātay; vispō.huḷyātay; vīspqm.huḷyātay; frādat.vīspqm.huḷyātay; frajyātay; darəgō.jītay; mərəzu.jītay; huḷītay vohu.jītay; darəgəm.jītay; us.jītay; parājītay

***g^{uh}ed^h-** EDIV 220-1; LIV 217 [*LIV* bitten, wünschen]

Simplex (E/O-grade root)

ǰastay ‘request’

Complex (E/O-grade root)

aǰastay; ava.ǰastay ‘request’

***g^{uh}en-** EWA 2:800-1; LIV 218-9 [LIV schlagen]

Simplex (E/O-grade root)

ǰantay ‘Schlagen, Erschlagen’

Complex (Zero-grade root)

haθra.ǰatay; baodō.ǰatay; aipi.ǰatay; skandō.aipi.ǰatay; niynintay (E/O-grade root?); *aipi.ǰaiti* INF; *paiti.ǰatay*

***Hejk’-** EDIV 158; LIV 223 [LIV sich aneigen]

Simplex (Zero-grade root)

ištāe INF

Complex (Zero-grade root)

θwa.ištay; puθrōištay; ainištay; vahištōištay

***Hers-** EWA 1:123-4; LIV 224 “Spear/lance” [LIV stoßen]

Simplex (Zero-grade root?)

arštay “spear, lance”

Complex (Zero-grade root?)

darəya.arštaya; darəya.ārštaya; arštyō.barəzan; vazəmnō.arštay; tiži.arštay; tižy.arštay; vaēžyarštay; pəṛəθvarštay [name]; *bəṛəzyarštay* [name]; *vaēžyarštay* [name]; *tižyarštay* [name]; *pəṛəθvarštay* [name]; *aršti.bara* [?]

***Hjag’-** EWA 2:393-3; LIV 224-5 “Sacrifice” [LIV verehren]

Simplex (E/O-grade)

yešti INF

Complex (E/O-grade root)

frāyaštay “Darbringung, Opferung”; *hufrāyaštay; aš.frāyaštay; huyaštay; aš.yaštay* ; *dužyaštay; hufrāyaštayaē-ča* INF

***Huer-** LIV 227-8 “In custody “ [LIV einschließen]

Simplex (E/O-grade root)

varaiθya [*-e-tjo- or *-nt-jo-]

***h₁eh₁s-** EWA 1:181-2; LIV 232 [LIV sitzen]

Simplex (E/O-grade root)

āste INF

***h₁ej-** EWA 1:102; LIV 232-3 [LIV gehen]

Simplex (Zero-grade root)

ite INF

Complex (Zero-grade root)

vasā.itay; upaētay; āitay; frāitay; aiβitay; xvītay; vītay; āite INF; *xvīte* INF; *upāiti* INF;
paititay

***h₁ep-** EWA 1:167; LIV 237 [LIV fassen, ergreifen]

Bartholomae does not provide a translation for this word. Vedic Sanskrit has *āpti-* “Erreichung, Erlangung” which could well be connected. *Paⁱti-* does occur in Iranian with this verbal root, meaning “to reach to” (see EDIV 161-3).

Complex (E/O-grade root)

paityāptay ?

***h₁er-** EWA 1:117; LIV 238 [LIV wohin gelangen, geraten]

Simplex (E/O-grade root for the first, Zero for the others)

araθya [*-tjo-]; *arətay; ərətay* “energy”

Complex (E/O-grade for the first two items; Z-grade for the last three)

frāraiθya [*-tjo-]; *xvaraiθya* [*-tjo-]; *vya^rəθya* [*-tjo-]; *frā^rətay; frō^rə^{tōi}š* [stem ? INF]

***h₁euH-** EWA 1:134; LIV 243-4 [LIV helfen, fördern]

Simplex (Zero-grade root)

ū^hai INF

***h₁ger-** EWA 1:574-5; LIV 245-6 [LIV erwachen]

Complex (Zero-grade root, but long first suffix)

fra^yrātay “Erwachen”

***h₁ueg^{uh}-** EWA 1:283; LIV 253 [LIV feierlich sprechen]

Complex (Zero-grade, and E/O-grade where specified)

pairi.aoxtay (E/O-grade); *pairyaoxtay* (E/O-grade); *arəm.uxtay*; *antarə.uxtay*; *urvāxš.uxtay*; *yātuxtay*; *hūxtay* “gutes Sprechen”; *afraoxtay* (E/O-grade)

***h₁ueh₂-** EWA 2:538; LIV 254 [*LIV* verlassen, aufgeben; ablassen, aufhören]

Complex (E/O-grade)

fravātay “Auslöschen”

***h₂ejs-** EWA 1:270-1; LIV 260-1 [*LIV* suchen]

Complex (Zero-grade root)

paⁱrištay “Aussuchen, Auslesen”

***h₂enh₁-** EWA 1:72; LIV 267-8 [*LIV* atmen]

Complex (E/O-grade root)

āntay (< *ā-antay*) “Einatmen”; *parāntay*

***h₂ueh₁-** LIV 287 “Belonging to the wind” [*LIV* wehen]

Simplex (E/O-grade root)

vātya [***-tiō-**]

Complex (E/O-grade root)

vāⁱti-gaēsa [name of a mountain; ‘one whose hairs (i.e. trees) are tossed by the wind’]

***h₂ueks-** EWA 2:485-7; LIV 288-9 [*LIV* (heran)wachsen, groß werden]

Complex (Zero-grade root)

paⁱri.uxšatay [could be ***-nti-** ?]

***h₃er-** EWA 1:105-6; LIV 299-301 [*LIV* sich in (Fort-) Bewegung setzen]

Complex (Zero-grade root)

frērāntay [***-nt-**]; *afērātay* [***-ti-**?]; *paⁱti.ərātāe* INF

***h₃rejH-** EWA 2:437-8; LIV 305-6 [*LIV* wallen, wirbeln]

This is apparently cognate with Vedic *rīti-* “Strom, Bewegung”, albeit with some pejoration.

Simplex (Zero-grade root?)

aⁱritay “Bekacken”

Complex (Zero-grade root)

aiβi.iritīm ABS

1.*ieh₂- EWA 2:407-8; LIV 309-10 [*LIV* dahinziehen, fahren]

Complex (E/O-grade root)

vasā.yāstay “Gehen nach Belieben, Freiheit der Bewegung”

***ieh₃s-** EDIV 210-1; LIV 311 [*LIV* gürten]

Complex (E/O-grade)

aiβyāstay (1) “Anlegen des Gürtels, der Gürtelschnur”; *anaiβyāstay*

***?iem-** EWA 2:399-400; LIV 312 [*LIV* ausstrecken, hinstrecken]

yatay is presumably cognate with Vedic *yāti-* “Festhaltung, Lenkung”. There appears to be a slight semantic development from “to stretch/reach out” to “to hold on to”.

Simplex (Zero-grade root)

yatay “Sichhalten an -, Sichrichten nach”.

Complex (Zero-grade root)

apayatāe INF; *apayeti* INF

***ies- ?** EWA 1:201

This root is a root of possibly non-PIE origins that made it into Indo-Iranian at quite an early date (cf. Vedic *iṣṭakā-* “gebrannter Ziegel”). PIE ***ies-** (see LIV 312-3) has the meaning of “sieden, schäumen”, and it is hard to relate such a verb with a noun meaning ‘brick’. These words could be connected to Tocharian B *iścem-* “Lehm”.

Simplex (Zero-grade root)

iṣṭiia- “Ziegel, Backstein”; *iṣti-* (OPers) “luftgetrockneter Ziegel”

***iet-** EWA 2:394-5; LIV 313-4 [*LIV* sich (fest) hinstellen]

This root mostly attests a meaning of “to position oneself”, but it also seems to have a meaning of “to approach/go/reach (for a goal)” (see EDIV 214-5). Avestan *aiβi-* (LIPP 2:350-1) has a meaning “to/towards/thither/against”, so we could probably translate *abyastay* as “putting oneself in a position, or moving, towards (a goal)”, hence Bartholomae’s translation of “an eager effort”.

Complex (E/O-grade root)

abyastay “eifrige Bemühung um”

***H₁euH-** EWA 1:481, 2:404-5 “Pastureland”

This is cognate with Vedic *gávyūti*- “Weideland, Rinderweide”, and it presumably comes from a verb meaning “to pasture/graze”. Some scholars connect this word with Vedic *yava*- and Avestan *yauua*- ‘Getreide’, Hittite *eyan*- “a kind of grain”, Lithuanian *jāvas* “grain plant”, and Greek ζεῖα “rice-wheat” (see HIL 263-4). The Hittite root likely reflects initial ***i_e**, whereas the Greek form likely reflects initial ***H₁e**. Sanskrit *‘yūti*- presumable reflects an initial laryngeal because of lengthening of preceding vowels.

Complex (E or O grade root)

gaoyaotay; vasō.gaoyaotay; pouru.gaoyaotay

***i_eug-** EWA 2:417-8; LIV 316 “Able/Skillful” [LIV anschirren]

The semantic development appears very unusual here. Bartholomae connects these words with the root meaning “to yoke”. *Yaoxštay* seems closer to Vedic *ójas*- “Kraft, Lebenskraft, Macht” (< PIE ***h₂eu_g-** “stark werden”), but we would not expect to see the initial [y] if these were related. Perhaps the best etymology could be ***h₁euk-** [LIV sich gewöhnen (an), lernen]. The initial ***i_e** in Iranian is understood to have been borrowed from the final ***i_e** of some preverbs (see EDIV 216-7).

Simplex (E/O-grade root)

yaoxštay “Fertigkeit, Fähigkeit, Gewandtheit, Geschick”; *yaoxštivant* [***(s)-ti-uent-**] “gewandt, geschickt”

***i_eug'H-** LIV 315-6 [LIV unruhig werden]

Simplex (E/O-grade root)

yaoštay “Rührigkeit, Emsigkeit (in religiösen Dingen)”

1.*keh₂- EWA 1:334; LIV 343 [LIV begehren]

The main problem with this reconstruction is the short [a] in the Avestan root. With a laryngeal following a vowel we would expect a long vowel, and in the zero-grade we would expect the syllabic form of the ***h₂** laryngeal to become an [i] and the following [t] to be aspirated. Perhaps, the short [a] is some kind of paradigmatic compromise between [ā] and [i].

Simplex (Zero-grade root?)

katay (adj.) “lubens, willig (?)”

2.*k^(u)eh₂- EWA 1:445-6, for *čātaya* see EWA 1:335-6; LIV 334 [*LIV* graben]

The complex forms appear to be nt-stems, else they may belong to another root.

Simplex (E/O-grade root)

čātaya Possibly belongs to this root. ‘Located in a well-shaft’

Complex (Zero-grade root?)

parakantayaē-ča INF; *vīkantāe* INF; *anuskante* INF

***k^(u)enH-** EWA 1:296-7; LIV 352 [*LIV* Gefallen finden, in Freude geraten]

Simplex (E/O/Zero-grade root?)

kāθē INF

1.*kerH- EWA 1:310-1; LIV 353 [*LIV* rühmend gedenken]

Simplex (Zero-grade root)

kərətay (3) “feierliche Erwähnung, Nennung; Verkündung, Kunde”

Complex (Zero-grade root)

yasnō.kərətay; frā.kərətay

***(s)kert-** EWA 1:315-6; LIV 559-60 [*LIV* (zer)schneiden]

This verb with the *fra-/frā-* preverb sometimes seems to have the meaning “to shape or produce by cutting”.

Complex (Zero-grade root)

frākərəstay “Hervorbringung”

***ksneṽ-** EWA 1:441; LIV 373 [*LIV* schärfen]

This reconstruction is somewhat contentious. LIV suggests that the semantic development went as follows: “die Sinne schärfen” > “achtgeben auf” > “(zu)hören”. LIV also notes that Young Avestan preserves the old meaning in *hu-xšnuta-* “gut geschärft”. Johnny Cheung (EDIV 457-8) suggests the root comes from PIE ***ksenu-** “to exchange gifts (between guest and host)”, and compares it to Greek ξένοϛ “guest-friend, guest, host”. The Indo-Iranian verb *xšnav-* is translated by Bartholomae as “to be satisfied”, but by Manfred Mayrhofer (EWA) and Martin Kümmel (LIV) as “to hear”. An example of the verb can be seen in *Yasna* 68.9:

xshnuyâ-nô ýasnem ahurâne ahurahe

“Hear (be satisfied with/approve of) our praise/sacrifice, O lady of the Lord.”

Considering the preceding phrase is *surunuyâ-nô ýasnem ahurâne ahurahe*, which is identical except for the verb *srav-* “to hear”, it is likely that the meaning of *xšnav-* is slightly different from *srav-* (LIV 334-5 ***k'leu-** “hören”).

Simplex (Zero-grade root)

xšnūtay “Zufriedenstellung”

Complex (Zero-grade root)

ašava.xšnvaitya [? ***(n)t-i-o-**]; *axšnūtay*; *huxšnūtay*

***k'eHs-** EWA 2:662-3; LIV 318-9 [LIV anweisen]

The basic meaning of ***k'eHs-** is “to give an instruction” (cf. Vedic *śās-* “Gebot”, *śāsus-* “Anweisung”). In the present tense it tends to have the iterative meaning “to teach”. Comparing Vedic *su-śiṣṭí-* “gute Anweisung” with Avestan *asīštay*, we would expect *asīštay*, with the negative prefix *a(n)-* to mean something along the lines of “the one without instruction/teaching/command”. Reconciling this with Bartholomae’s gloss seems a tall order.

Complex (Zero-grade)

asīštay “Verheissung auf-; Gegenstand der Verheissung, verheissener Lohn”

***(s)k'ek-** EDIV 324-5 [EDIV to pass]

Cheung (EDIV) seems to connect this word to a verbal root ***(s)k'ek-** meaning “to pass”. He recognizes some Germanic cognates (e.g. OHG *scehan* “to run”), and one from Old Irish *scuichid* “moves, passes”, which he argues is contaminated by a similar verb ***skék-** “to jump”. LIV reconstructs a root ***skék-** [LIV 551-2 sich schnell bewegen, springen] under which the Germanic and Celtic words are listed. The Avestan word clearly reflects an initial ***k'**, so it may be best to accept Cheung’s proposal that there are two separate roots involved.

Simplex (E/O-grade root)

saxtay “(zeitliches) Vorübergehen, Ablauf”; *θakatay* (OPers) “(zeitliches) Vorüber-, Zuendegehen”

***k'elH-** EWA 2:641; LIV 323 “Name of an illness“ [LIV kalt werden, frieren]

This word could be connected to the verb ***k'elh₂- (1)** LIV 327-8 [LIV brechen, zerbrechen (intr.)], or to Avestan *sāra-* and *sarah* “head”. Bartholomae prefers the latter, suggesting a compound of ***k'rh₂** “head” and ***stoh₂-éje-** “make (something/somebody) stand”. Avestan *sārana-* is a strikingly similar word for an illness which appears not to be a compound. ***k'rh₂-es-** is usually the reconstructed form of head (cf. Vedic *śiras-* “head”), so it is not impossible that the *-as-* in *sārastay* is a derivational morpheme, and not the start of a compounded root. Avestan even attests the s-stem *sarah* to which it may be built, although the root vowel appears to be different.

Simplex (E/O/lengthened-grade root)

sārastay [***-os-ti-** ?] “Name einer Krankheit”; *sārastya* [***-os-tjo-**]

***k'eNs-** EWA 2:599-600; LIV 326 [LIV verkünden, (öffentlich) schätzen]

Simplex (Zero-grade root)

sastay “Preisen, Rühmen; Ruf, Ruhm; Weisung, Befehl; Lehre”

Complex (Zero-grade root)

Frasastay; daiṇ'hu.sastay; duš.sastay; frasasti INF

***(s)k'up-ti-** EWA 2:647

Suptidarənga does not have a secure etymology of which I am aware. It could be a compound of *suptay* “shoulder” and *darəna* “Befestigung, Aufenthalt”. *darəna* is derived from ***d^her-** [LIV 145-6 befestigen, fixieren]. Potentially, if *darənga* is derived from this verb, *suptidarənga* may have a literal meaning like “shoulder-fixed” or “one who supports the shoulder (of another)”.

Simplex (Zero-grade)

suptay “Schulter”

Complex (Zero-grade)

suptidarənga “Gaugenosse”

***k'lej-** EWA 2:665; LIV 332-3 [LIV sich anlehnen]

With the prefix *ni-* “down”, this verbal root has the meaning in Indo-Iranian “to bring to, assign” (EDIV 354-5).

Complex (Zero-grade root)

nisritay “Anvertrauen, Überlassen”; *anisritay*

***k'leu-** EWA 2:666-7; LIV 334-5 [LIV hören]

I would expect *asrutay* to mean something more along the lines of “not-listening” (cf. Vedic *ásruti-* “Nichthören”).

Complex (Zero-grade root, except for the last item)

asrutay “Nichtzugehörbringen, Unterlassen des Vortrags”; *frasrūtay*; *afrasrutay*; *srāvahyeitī*
INF (o-grade root built off a denominal verbal form in ***-os-je-**)

***k'leus-** EWA 2:672; LIV 336 [LIV (zu)hören]

This root is most likely a desiderative derivative of ***k'leu-** (see above). The semantic development would presumably be from “wish to hear” > “willing to listen” > “obedient”.

Complex (Zero-grade root,)

asruštay “Ungehorsam”

?*k'ueH- LIV 339; EDIV 369-70 [LIV werfen]

Complex (E-grade root)

pairi.spātay “Herumwerfen, Hinwerfen, Hin(ein)fallenlassen”

3.*k'ej- EWA 1:532-3; LIV 379-80 [LIV Buße entgegennehmen, strafen]

Simplex (Zero-grade root)

čiθayaē-ča INF

***k'ejt-** EWA 1:547-8; LIV 382-3 [LIV bemerken, erkennen]

Simplex (Zero-grade root)

čistivant; *čīštay* (1) ‘Thinking, insight’; *čīštay* (2) ‘Learning, science’

Complex (Zero-grade root)

čīštivastara; *hučīštay*

***k'elh₁-** EWA 1:307-9; LIV 386-8 [LIV eine Drehung machen, sich umdrehen, sich (um- zu-)wenden]

If *čarāitī* and *čarāitikā* are connected with this verb, they would have the literal meaning of “female ones who move around/travel”. This perhaps hints at an earlier nomadic lifestyle.

Simplex (E/O-grade root)

čarāitīkā [***-ti-ke-h₂**] “young woman”; *čarāitī* “ibid.”

***k^uer-** EWA 1:307-9; LIV 391-2 [LIV (ab)schneiden, schnitzen]

This root, according to LIV, in early-PIE means “to cut”, but in later-PIE it comes to mean “to make”.

Simplex (Zero-grade root)

kārātay (1) “Name eines Kleidungsstücks”; *kārātay* (2) “Machen (usw.)”; *kārātāe* INF

Complex (Zero-grade root)

ākārātay; *frašō.kārātay*; *hankārātay*, *hānkārātay* “Vollziehung, Vollendung”; *rānyō.skārātay* “Glück, das Glück schaffend, bringend; *vohu.kārātay* “Name einer Pflanze (*lit.* having/being (in) a good performance ?)”

***k^uieh₁-** LIV 393-4; EDIV 37-8 [LIV ausruhen]

Simplex (E/O-grade root)

šiyātay OP, *šātay* YAv “Freude, Wohlbehagen, Glück”; *šāiti* INF

Complex (E/O-grade root)

kudaṭ.šātay; *ašāite* INF

***k^uieṇ-** EWA 1:552-3; LIV 394-5 [LIV sich in Bewegung setzen]

Complex (Zero-grade root)

aipi.šūtay “Verschieben, Versetzen”; *anapi.šūtay*; *frašūtay*; *aiβišūiti* INF

***leik^u-** EWA 2:457-8; LIV 406-8 [LIV zurücklassen, sich entfernen von]

Complex (Zero-grade root)

byārixti INF

1.*leuḡ- EWA 2:465; LIV 415 [LIV lösen, brechen]

Complex (Zero-grade root)

anavauruxtay “Nichtbrechen des Gelübdes, Eidestreue”; *frauruxtay* “Zerbrechen, Zerstören”

***meh₁-** EWA 2:341-2; LIV 424-5 [LIV (ab)messen]

Complex (Zero-grade root)

zastō.mitay “das Mass der Hand habend”

1.*meiH- EWA 2:316-7; LIV 427 [LIV gering werden, schwinden]

Complex (Zero-grade root)

vīmitay “Zerstörung, Vernichtung”

***mejk’-** EWA 2:373-4; LIV 428-9 [LIV mischen]

Simplex (Zero-grade root)

mīšti ADV “(in Mischung sva.) durcheinander; (in Vereinigung sva.) miteinander”

***melk’-** EWA 2:323-4; LIV 434-5 [LIV behindern, schädigen, zerstören]

Simplex (E/O-grade root)

mahrkaθāi INF

Complex (Zero-grade root)

amərəxtay “Nichtverderben, Freiheit von Verderben, Sicherheit vor Gefährdung”

1.*men- EWA 2:296-7; LIV 435-6 [LIV einen Gedanken fassen]

Ārmatay is a compound of *arəm* “recht, passend, wie sichs gehört” and *matay* “Denken” (cf. Vedic *arāmati*- “rechter, bereiter Sinn; Gottheit des rechten Sinnes”. See EWA 1:110).

Simplex (Zero-grade root)

matay “Denken”

Complex (Zero-grade root)

tūšnā.matay; tarəmatay; āyrəmatay; tarō.matay; anumatay; humatay; arəm.matay; ārmatay; tušnā.matay; anumatayaē-ča [INF]; *ārmaitiš.hāgəṭ; ārmaitiš.hak; ārmaiti.paoirya; anumatəe* INF

2.*men- EWA 2:306-7; LIV 437 [LIV bleiben, warten]

Complex (Zero-grade root)

upa.maitīm ABS “(es ist) zu warten”

?3.*men- LIV 437 [LIV emporragen]

Simplex (Zero-grade root)

matay “Vorsprung (des Gebirgs), promunturium”

***mer-** EWA 2:318-9; LIV 439-40 [LIV verschwinden, sterben]

*Simplex (E/O-grade root with *-tijo- suffix, Zero-grade with all others)*

martiya [***-tijo-**]; *mərətay* “Sterben, Tod”; *mərəθyav* [***-tiu-**]; *martiya* [***-tijo-**]

*Complex (E/O-grade root with *-tijo-suffix, otherwise Zero-grade)*

ava.mərətay; humartiya [***-tijo-**]; *aməša* [***-tijo-**] “unsterblich”

***(s)mer-** EWA 2:780-1; LIV 569-70 [LIV denken an, sich erinnern]

Complex (Zero-grade)

fra.mərətay “Aufsagen, Rezitieren”; *hu.mərətay* “gute Verkündigung”; *huframərətayaē-ča* INF; *framərətāē-ča* INF

***meṛk-** EWA 2:382; LIV 443-4 [LIV losbinden, abstreifen]

Complex (Zero-grade root)

framuxtay “Losbinden, Ausziehen (des Schuhwerks)”

***meṛsH-** EWA 2:363; LIV 445 “Closed hand/fist” [LIV aufheben, wegnehmen]

Vedic *muṣṭí-* “geballte Hand, Faust” is morphologically and semantically identical to Avestan *mušti-*^o.

It is by no means certain that this word is even deverbial. There is a potential semantic correlation with Lithuanian *mùšti-* “schlagen, prügeln”. Greek *μύω* “close, be shut” from ***meṛs-** could also be related, although there is not any evidence of this verb outside of Greek [LIV 444 sich schließen].

Complex (Zero-grade root)

mušti.masah “Grösse eine Faust; (adj.) faustgross”

***mleṇh₂-** EWA 2:235-6; LIV 446-7 [LIV sprechen]

Simplex (Zero-grade root)

mrūte INF; *mrūitē* INF “zu sagen”

Complex (Zero-grade root)

frāmrūte INF; *frāmrūite* INF

1.*neb^h- LIV 448; EDIV 276 [LIV feucht werden, bewölkt werden]

Complex (E/O-grade root)

aiβi.naptīm ABS (mit *asti*) “er befeuchtet”

***(s)neh₂-** EWA 2:769-70; LIV 572-3 [LIV baden, schwimmen]

Complex (E or O grade root)

frasnātay “Abwaschung”; *usnātay*; *upasnātāe* INF; *frasnātāe* INF

***neiH-** EWA 2:17-9; LIV 450-1 [LIV führen, leiten]

Complex (Zero-grade root)

aiβi.nītay “Herzuführen”

***peh₂(i)-** EWA 2:73-4; LIV 460 [LIV schützen, hüten, weiden (tr)]

Some scholars would connect *patay* to this PIE root, ultimately suggesting the meaning of “protector”. However, Lubotsky, for example, sees it as a simple i-stem.¹⁰⁵

Simplex (Zero-grade root?)

paiθimna; patay “Herr, Gatte”; *piθe* INF

Complex (Zero-grade root?)

xvāpaiθya (1); *xvāpaiθya* (2); *xvāepaiθya*; *aēθra.patay*; *vaēḍyā.patay*; *xvaēpatay*; *nmānō.patay*; *zantupatay*; *daiṇhu.patay*; *hamiḍpatay*; *baēvarə.patay*; *vispatay*; *nipātayaē-ča* INF (E/O-grade root)

***peh₃(i)-** EWA 2:113-4; LIV 462-3 [LIV trinken]

Complex (Zero-grade root)

vīspō.pitay (adj.) “alltränkend”

2.*per- EDIV 293; LIV 473 [LIV gleich machen, ausgleichen]

Complex (Zero-grade root)

āpəratay “Ausgleich, Sühne”

***peth₁-** EWA 2:71-2; LIV 477-8 [LIV fallen]

Complex (E/O-grade root)

avapastōiś INF; *paiti.pastay* “Entgegengehen, -treten”

1.*peṃH- EWA 2:105-7; LIV 480 [LIV reinigen, läutern]

Simplex (Zero-grade root)

pūitika [*-ti-ko-] “der Läuterung dienend”

2.*peṃH- EDIV 302-3; LIV 480-1 [LIV faulen, stinken]

Simplex (E/O-grade root, and zero-grade root respectively)

pavitay ‘Fäulnis, Verwesung’; *pūtay* ‘Fauligwerden, Verwesung’

***preṇH-** EWA 2:181-2; LIV 490 [LIV vertraut, lieb sein/werden]

Simplex (Zero-grade root)

fritay ‘Gebet’

Complex (Zero-grade root)

¹⁰⁵ A. M. Lubotsky, *The System of Nominal Accentuation in Sanskrit and Proto-Indo-European* (1988), p.30.

ātarəfriθita; afriθyant [*-tj-ent-]; *āfritay* “Anwünschen; Segnung”; *ratufritay; hada.ratufritay; usəfritay; ratufritāe* INF

***prek'-** EWA 2:183-4; LIV 490-1 [LIV fragen]

Simplex (first two forms have e/o-grade root, the third is presumably has the typical YAv zero-grade form in [ar] before š)

fraxštya [*-tjō-]; *fəraštay* “Sichberatenlassen; *parštay* (1) “(gegenseitige) Befragung, Disputation”

Complex (E/O-grade for the first item, zero-grade for the remaining two)

ahifraštay; paiti.parštay; hām.parštōiš INF

1.*reh₁- EWA 2:446-7; LIV 499 [LIV geben, schenken]

Simplex (E/O-grade root)

rātay (2) ‘Gabe, Gewährung’; *rāiti* INF

Complex (E/O-grade root)

rāiti.hankərəθa; arāitivant [*-ti-uent-]; *arātay; frarātay*

***reh₁d^h-** EWA 2:448; LIV 499-500 [LIV erfolgreich durchführen]

Complex (E/O-grade root)

ārāstyā [*-tjō-] Name of a believer of the Vatersbruders of Zarathustra; *nanarāstay* Name of a believer (perhaps “one who has completed *nana* (?) successfully”)

?*rejs- EWA 2: 462-3; LIV 505 “Death” [LIV Schaden nehmen]

Complex (Zero-grade root)

para.ⁱristay “Sterben, Tod”

***sed-** EWA 2:692-3; LIV 513-5 [LIV sich setzen]

The etymology of *aiβyāstay* (2) is not entirely certain. Bartholomae analyses it as *aiβi* ‘towards/thither/against’ + *ā* ‘towards/thither’ + *√had* ‘to sit’, and notes that *ā* + *√had* usually means “herangehen”, as does *ā* + *√sad* (the same root) in Vedic. Interestingly, the Greek word for “road”, *ὁδός*, comes from the same root. If this is a zero-grade form of ***sed-**, this must be a simple i-stem, not a ti-stem.

Complex (E/O-grade root)

ni.šastay “Begatten (Sichniederlassen auf das Weib)”; *pasuš.hastay* “Hürde, Pferch für Kleinvieh, Schafe.”

Complex (Zero-grade root)

aiḅyāstay (2) “Begehen, Zurücklegung (eines Wegs)”

***seh₁(i)-** EWA 2:720-1; LIV 518 [LIV loslassen]

Bartholomae connects these words with the verb best reconstructed by ***sh₂ei-** [LIV 544 fesseln, binden]. Semantically this seems unlikely, as *hātay* suggests something that has been separated more than something that has been bonded. ***seh₁(i)-** is at least attested in Vedic, although I am not aware of it being attested in Iranian.

Simplex (E/O-grade root)

hātay “Stück, Abschnitt”

Complex (E/O-grade root)

haptan̄hātay

***seik^u-** EWA 2:744-5; LIV 523 [LIV ausgießen]

Simplex (Zero-grade root)

hixtayaē-ča INF

Complex (Zero-grade root)

para.hixtay “Weggiessen, Ausschöpfen”

1.*sek^u- EWA 1:686-7; LIV 525-6 [LIV sich anschließen]

Simplex (E-grade root)

hačitay “Zusammensein mit -, Begleitung”

Complex (Zero-grade root)

āskitay “Sichanschliessen”;

***selg'-** EWA 2:709; LIV 528-9 [LIV loslassen, entsenden]

Simplex (E/O-grade root)

harštāe INF “zu entlassen”

Complex (E/O-grade root)

apaṇharštāe INF; *apaṇharštayaē-ča* INF

1.*ser- EDIV 129-30; LIV 534 [LIV aufpassen auf, beschützen]

Complex (E-grade root)

nišanharətayaē-ča INF “(and) Acht zu haben auf -, zu wachen über”

?***seu-** EWA 2:713-4; LIV 537-8 [LIV auspressen]

Simplex (Zero-grade root)

hutay, hūtay (1) “Auspressung, Kelterung”

Complex (Zero-grade root)

haoma.hūtay; aiβiš.hūtayaē-ča INF

***seuh₁-** EWA 2:715-6; LIV 538-9 [LIV antreiben, in Bewegung halten]

Bartholomae connects this word to the Indo-Iranian √**hav-** (2) “antreiben”. I have little reason to disagree with this. *hūtay* is the name for one of the four ancient castes (*pištra-*). It does not refer to the priests, warriors, or farmers, so presumably it refers to craftsmen. Presumably it means something like “the industrious/busy (class)”.

Simplex (Zero-grade root)

hūtay (2) “Bezeichnung des vierten, des Handwerkerstandes”

***sh₂ei-** EWA 2:720-1; LIV 544 [LIV fesseln, binden]

Complex (E/O-grade root)

ā.hōiθōi INF “zu unterdrücken”

?***skeb^hH-** EWA 2:750-1; LIV 549-50 [LIV stützen]

This root is not attested outside of Indo-Iranian, with the possible exception of Latin *scamnum* “bench, stool, step” (see EDIV 344).

Complex (E/O-grade root)

paitisčaptayaē-ča INF “(und) sich zu stemmen gegen -, zu unterdrücken”

***spek'-** EWA 2:107-8; LIV 575-6 [LIV schauen, ansehen, spähen]

Bartholomae seems to take *spašitay* as a compound of *spas-* “Späher, Wächter” and *itay-* “Gehen”. If this is correct, it would mean something along the lines of “scout-movement/moving”, and it would be a ti-stem of ***h₁ei-** not **spek'-**.

Simplex (E/O-grade root)

spašitay “Beobachten, Betrachten”; *spaxštay* “Spähen”

Complex (E/O-grade root)

ava.spaštay; pouru.spaxštay

***sReK^(u)**- (?) EWA 2:743, 783

[EWA Ecke, Seite]

This word is cognate with Vedic ti-stem *srakti-* “Zacke, Ecke” and o-stem *sṛká-* “Spitze (?)”.

Considering Indo-Iranian has undergone mergers of ***r** and ***l**, and ***k^u** and ***k**, we cannot reconstruct this root more than ***sReK^(u)**- unless we find some strong evidence from outside of Indo-Iranian.

Simplex (E/O-grade root)

θraxtay, sraxtay “Ecke, Seite”

***steh₂**- EWA 2:764-6; LIV 590-2

[LIV wohin treten, sich hinstellen]

Simplex (E/O-grade root)

stātay “Stehen, Stand; Aufstellung, Statuierung”

Complex (E/O-grade root)

xvāstātay; drvō.stātay; ništātay; aštātay; iṣarə.štāitya [***-tjo-**] (adv.) “In the shortest time”;
paitišātāē INF; *paitišātayaē-ča* INF

***steip-** LIV 594 ?

[? LIV steif machen]

There is little to support this etymology, apart for some similar phonology. There is another etymology with a similar meaning, ***steib-** [LIV 592 steif/fest machen], but both are fairly insecure.

***steib-** has a problematic ***b** which is rare in PIE, and ***steip-** is only attested in Baltic.

Simplex (Zero-grade root)

stiptay “Name eines Insekts, das auf Hunden schmarotzt”

***ster-** EDIV 364; LIV 597-8

[LIV niederstrecken]

This root with an *ā-* preverb means “to sin” in Iranian (see EDIV 363-4).

Complex (Zero-grade root)

anāstərətay “Sichnichtversündigen, Nichtgeraten in den Zustand der Sündigkeit”

***sterh₃**- LIV 599-600

[LIV hinbreiten, ausbreiten]

Complex (Zero-grade root)

barəsmō.stərətay “Spreitung von *Barəsmān*”

***steu-** EWA 2:757-8; LIV 600-1

[LIV bekannt sein; preisen]

Complex (Zero-grade root)

apastūtay “das Sichabgeloben, Abschwören”; *upa.stūtay*; *haoma.stūtay*; *āstūtay*
“Sichangeloben an-, Sicheinschwören auf -”; *ašō.stūtay*; *ništūtay*

2.2 *suel- EDIV 147-8; LIV 609 [LIV (ver)schlucken]

Simplex (Zero-grade root)

xvarəṭay “Geniessen; Essen, Trinken”; *xvarəṭāe* INF

Complex (Zero-grade root)

haoma.xvarəṭay; *haomō.aṇ^vharəṭay*; *fraṇ^vharəṭay*

***tek^u-** EWA 2:610-11; LIV 620-1 [LIV laufen, fließen]

Complex (E/O-grade root)

vītaxtay “Zerfließen, Schmelzen”; *pairi.taxtay* “Herumlaufen”

***tens-** EWA 2:553, 554; LIV 629 [LIV ziehen]

Compare Vedic *vītaṣṭi-* “Spanne, Spannbreite (als Längenmaß)”

Complex (Zero-grade root)

vītaṣṭay “Spanne”; *θrivitaṣṭay*; *vītaṣṭi.drājah*

***terh₂-** EWA 1:629-32; LIV 633-4 [LIV durchkommen, überqueren]

Complex (Zero-grade root)

paiti.tarəṭayaē-ča INF “(und) zu überwinden, zu bewältigen”

***tetk'-** EWA 1:612-3; LIV 638-9 [LIV erzeugen, herstellen]

Complex (E/O-grade root)

hutaṣṭay “guter Bau”; *vačastaṣṭay* (a Gathic strophe); *naēmō.vačastaṣṭay* (a half-strophe);
maṭ.vačastaṣṭay “with all strophes”; *vačastaṣṭivaṭ* [*-ti- ɣent-] (adv.) “stropheweise”

***tk'eṭ-** EWA 1:427; LIV 643-4 [LIV Landbau treiben, siedeln, wohnen]

Simplex (Zero-grade root)

ṣīṭay “Wohnen; Wohnung, Wohnstätte”

Complex (Zero-grade root)

gavaṣīṭay; *vasō.ṣīṭay*; *duṣīṭay* “übles Wohnen sva. Elend, Unglück”; *huṣīṭay*; *upa.ṣītāe* INF;
aiβi.ṣītāe INF; *darəyō.ṣīti* INF; *rāmō.ṣīti* INF; *huṣīti* INF

?*treH- EWA 1:679-80; LIV 646 [LIV schützen]

Simplex (E/O-grade root)

θrāstay “Schirm, Schutz”

***treh₁u-** EDIV 394-5; LIV 647 [LIV aufziehen, nähren]

Simplex (E/O-grade root)

θraoštay “(Reife sva.) Vollendung, Ende”

***tres-** EWA 1:678-9; LIV 650-1 [LIV (vor Schreck) zittern]

Complex (Zero-grade root)

haθra.tarštay “auf einmal entstehende Furcht, plötzlicher Schreck”; *aiβiδātō.tarštay*

***tuerk'-** EDIV 399-400; LIV 656 [LIV schnitzen, zurechtschneiden]

Simplex (Zero-grade root)

θβarštay “Schneiden; Bilden, Schaffen”

Complex (Zero-grade root)

upa.θβarštay

***ueid-** EWA 2:579-81; LIV 665-7 [LIV erblicken]

The preverb *ā-* plus the Iranian root $\sqrt{\text{uaid-}}$ had the meaning “to announce” (EDIV 408-9). Bartholomae says that it effectively transforms the verb into a causative (e.g. “to see/know” > “to make something seen/known”).

Complex (Zero-grade root)

āvistay “Zuweisung (eines Opfers, Gebets), Widmung, Weihe”; *āvistay*; *āvistayaē-ča* INF;
aiβi.vistayaē-ča INF

***ueih₁-** EWA 2:509-10; LIV 668-9 [LIV sein Augenmerk richten auf, trachten nach]

Bartholomae reconstructs this word to the root $\sqrt{\text{vā(y)}}$ “jagen” which is a reflex of ***ueih₁-** (see LIV and EDIV 411-2), although the lack of ***i** or ***ī** causes serious problems for this theory. Perhaps it belongs to ***h₁ueh₂-** [LIV 254 verlassen, aufgeben; ablassen, aufhören] or ***uen-** [LIV 680-1 überwaltigen, gewinnen] instead (cf. *nivāstay* “entscheidender Sieg”). Ultimately *vāstay* seems too obscure for us to be sure of any etymology.

Simplex (E/O-grade root?)

vāstay “Verfolgung” (Bezeichnung eines strafbaren Delikts)

***uek'-** EWA 2:527-8; LIV 672-3 [LIV wünschen]

Simplex (Zero-grade root)

uštay “Wille, Wunsch”; *ušte* ? (adv.)

Complex (Zero-grade root)

pouruštay Name of a believer (“one with many desires”)

****uek*^h-** EWA 2:489-91; LIV 673-4 [*LIV* sagen]

Complex (Zero-grade root)

fraoxtaē-ča INF “singend abzubeten”; *anuxtāe* INF; *anuxtayaē-ča* INF

1.uel*-** or **1.**uer*-** EWA 2:512-3; LIV 674, 684-5 [*LIV* einschließen, verhüllen OR aufhalten, (ab)wehren]

The second PIE verbal root (**1.**uer*-**) sounds more plausible here.

Complex (E/Zero-grade root)

hqm.varətatay, *hqm.vəratay* “Wehrhaftigkeit, Tapferkeit”

****uelh*₁-** EWA 2:511-2; LIV 677-8 [*LIV* (aus)wählen]

This root sometimes has the meanings of “to convince” and “to believe” (in the middle voice) in Iranian (see EDIV 420-1).

Complex (Zero-grade root)

āvarətatay “Überzeugen (auf religiösem Gebiet), Bekehren, Verleiten zu -”; *fraorətatay*; *vistō.fraorətatay*

****uen*-** EWA 2:499; LIV 680-1 [*LIV* überwältigen, gewinnen]

Simplex (E-grade root)

vanaitivant [***-e-ti-uent-** or ***-nt-i-uent-**] “Sieghaft”; *vanatay* “Sieg”

Complex (Zero-grade root for the first two, e/o-grade for the last)

nivātay “entscheidender Sieg”; *haθra.nivātay*; *aiβi.vantīm* [***-ti-Hm**] ABS.

****uen*-** or ****uenH*-** EWA 2:499 or 501; LIV 680-1 OR 682-3 “Desiring”? [*LIV* überwältigen, gewinnen OR lieb gewinnen]

Manavantay could have the ***-uent-ih₂-** suffixes build on the verbal root ***men-**, meaning something like “possessing thoughts, thoughtful”.

Simplex (E/O-grade root)

vaintya [***-tjo-**] “flehend, flehentlich”

Complex (E/O-grade root)

manavantay “?”

2.uerg*’-** EDIV 425-7; LIV 686-7 [LIV wirken, machen]

Simplex (Zero-grade root)

varštay “Handeln, Tun; Begehen einer Tat”

Complex (Zero-grade root)

raθwyō.varštay; arəm.varštay; uzvarəštay; hvarštay; anu.varštāe INF; *anu.varštayaē-ča* INF

****uerh*₁’-** perhaps EWA 2:594-5; LIV 689-90 ? [LIV sagen]

I assume that *urvātay/urvātay* is cognate with Vedic *vratá-* “Gebot, Anweisung, Regel” and Avestan *urvata-* “Bestimmung, Gebot”. The root ****uerh*₁’-** seems as good as any because of corresponding phonetics and semantics, but we cannot rule out a roots with a final dental, a different resonant, and initial and final laryngeals (e.g. ***(H)*ueR*(t)-** or ***(H)*ueR*(H)-**).

Simplex (Zero-grade root?)

urvātay “foedus, Vertrag, Vertragsabschluss”; *urvātay* “Gelübde”; *urvaitya* [***-tjo-**]

Complex (Zero-grade root?)

ava.urvatay; vačō.urvatay; avačō.urvatay

****ureik*’-** EDIV 437-8; LIV 699 [LIV drehen; einhüllen]

Cheung (EDIV) notes that this root plus the preverb *vī-* means “to separate”.

Complex (Zero-grade root)

vī.urvīštay “Auseinandergehen, Trennung”

1.tek*’-** EWA 1:426-7; EDIV 451-2; LIV 618-9 [LIV die Hand ausstrecken, empfangen, erlangen].

EDIV reconstructs the Proto-Iranian form as ****xšaH*’-**. The root must be in the zero-grade, and possibly has an ***-ei-** extension in the o-grade (e.g. ****tk-oi-***). It resembles a causative in many ways. The final *-aθiya-* part of the world could be from ***-nt-(i)-i-o-**, or a theme vowel (***-e-t(i)-i-o-**). Considering how uncommon theme vowels seem to be in Avestan with the ***-ti-** suffix, the former may be the most likely. Supporting this analysis, we also have verbal adjective forms such as Avestan *xšayant-*.

Simplex (Zero-grade root)

xšāyaθiya OPers (adj.) “im Besitz der Herrschergewalt, Königswürde, souverain”

Unsorted/Without Etymology

āhuti-yāra “Name of a region in Armenia” *Zero-grade root*

This is perhaps connected to the root **seu-* [LIV 537-8 auspressen].

fraxšti.dā “Wealth, abundance giving.” *E/O-grade root*

fraxštay “Wealth”

fraxšti (adv.) “Wealth”

fravaitī ? “?” *Root grade unclear*

haraitī ? “The Zoroastrian cosmic mountain” *E-grade root.*

This name perhaps belongs to the root **sel-* EWA 2:705-6; LIV 527-8 [*LIV* sich losschnellen, springen] (e.g. ‘the jumping one’), or to **ser-* EDIV 129-30; LIV 534 [*LIV* aufpassen auf, beschützen] ‘the protecting one’, and it may have an **-nt-* suffix.

hašitiya OPers (adj) “aufsässig, widersetzlich” *Zero-grade root*

vouru.ṣarəšti “Name of a land” *E/Zero-grade root (?)*

This could belong to a few possible roots, although the [š] is difficult to explain here:

2.*g^uelH- [LIV 207 träufeln, quellen] *Indic, but no Iranian verb attestation.*

***g^uelh₁-** [LIV 208 treffen, werfen] *No Indo-Iranian verb attestation.*

***g^uerH-** [LIV 210-1 Zustimmung bekunden] *Attested throughout Indo-Iranian languages*

***g^uerh₃-** [LIV 211-2 verschlingen] *Attested throughout Indo-Iranian languages*

***g^uerH-** and ***g^uerh₃-** seem to have the most Iranian attestations, so they are probably the most likely of the four roots. We should not rule out a loanword or an unattested root, however. Considering that *vouru-* means “broad/wide”, we could perhaps reconstruct meanings “place widely praised” or “place widely devouring”. The second sense sounds less convincing.

ṣṣtayana (patronymic adj.) and *ṣṣtayamna* (patronymic adj.) *Zero-grade root*

I would reconstruct such words **g^(u)ejš/T-*. No such root that I am aware of. There is of course the root **g^(u)ej-* meaning *(be)siegen, gewinnen*, but that would not explain the [š].

<i>āiθivant</i>	“Unheil, verderben, Leid”
<i>skatay</i>	“A Grasshopper ?”
<i>rātay</i> (1)	“dienen (?)”
<i>vaētay</i>	“Pasture”
<i>būtay</i>	“Name of a Daeva”

Perhaps this is a zero-grade form of **b^hueh₂-* [LIV 98-101 wachsen, entstehen, werden]. It could be comparable to Sanskrit’s post-Rig Vedic use of *bhūti* “Welfare (personified)”.

<i>buxtay</i>	“Heulen, Fauchen” (onomatopoeic)	<i>Zero-grade root</i>
<i>intay</i> ?	“Vergewaltigung, Kränkung”	<i>Zero-grade root</i>
<i>yuṣyastay</i>	A measure of distance	<i>E/O-grade root?</i>
<i>daxšmaēstay</i>	A measurement of length	<i>E/O-grade root?</i>
<i>hqm.irstay</i>	“Blending”	<i>Zero-grade root</i>
<i>aštay</i> (1)	“Bote”	<i>E/O-grade root?</i>
<i>aštay</i> (2)	“Pfeil”	<i>E/O-grade root?</i>

This could belong to **h₂ek-* [LIV 261 scharf sein/werden/machen].

<i>vīspa.θaurvō.aštay</i>	Name of a believer (“all-conquering-arrow/messenger”)	
<i>aštay</i> (3)	A measurement of length. Possibly from *h₃ek'to- ‘eight’	
<i>uzaštay</i>	A measurement of length -8 fingers wide. Possibly from *h₃ek'to- ‘eight.	
<i>frqštay</i>	From a verb meaning “erreichen, treffen”	
<i>dištay</i>	A measurement of length	<i>Zero-grade root</i>

This could belong to **1.*dejk-** [LIV 108-9 zeigen, weisen] or **2.*dejk-** [LIV 109 werfen] which seems semantically more likely, and is, despite not being a particularly well attested root, attested in Sakan Khotanese (Iranian) as *dīśś-* “werfen”.

<i>panča.yaxštay</i>	EWA 2:406	“5 branches/sticks”
<i>nava.yaxštay</i>	EWA 2:406	“9 branches/sticks”
<i>θri.yaxštay</i>	EWA 2:406	“3 branches/sticks”
<i>θrya.yaxštay</i>	EWA 2:406	“3 branches/sticks”

<i>āxštay</i>	“Peace”
<i>anāxštay</i>	“Having no peace”
<i>hazaṇrā.yaoxštay</i>	“Having 1000 skills”
<i>pouru.yaoxštay</i>	“Having many skills”
<i>arštay</i> (2)	Another name for the Goddess <i>Arštat</i> .
<i>ašti.gaḡya</i>	Name of an opponent of <i>Keresaspa</i>
<i>fravartay</i> (OPers)	Name of the Medes who opposed Darius I.
<i>maxštay</i>	Name of a believer.
<i>ačištāe</i> INF	From a verb meaning “essen, speißen” (Bartholomae).
<i>avaθe</i>	Indeclinable A Senseless Expletive (Bartholomae).
<i>iθe</i>	Indeclinable. Glossed as a senseless expletive (see Bartholomae).
<i>ainitay</i> YAv	(an+itay OR a+nitay) Possibly from *neiH- "without leadership".
<i>ānitay</i> Gathic	(an+itay OR a+nitay) Possibly from *neiH- "without leadership".
<i>axtay</i>	EWA 1:39; LIV 268 “Leiden, Schmerz”
This perhaps derives from *h₂enk- [LIV 268 biegen]	
<i>vyāxtay</i>	See entry for <i>axtay</i> above.
<i>axtya</i>	“Name of an unbeliever.” Probably connected to <i>axtay</i> “sorrow, pain”
<i>utayūtay</i>	“Perpetual, lasting”
This word may be connected to ?2.*ieṷ- [LIV 314-5 (sich) fernhalten; weichen].	
<i>utayutay</i>	“Name of a believer.”
This is perhaps from the root ?2.*ieṷ- (see above).	
<i>fraurustay</i>	“?”
<i>kapastay</i>	“Name of an illness”
Possibly comes from the root *peh₂k'- [LIV 461-2 festmachen].	
<i>āhitay</i>	“Defiled, dirty”
<i>mastay</i>	“?”
<i>anāiritay</i>	“Name of an Insect”

Perhaps this comes from ***h₃reiH-** [*LIV* 305-6 wallen, wirbeln], meaning something like “spinner/churner”.

vouru.barəšti “Name des im Nordwesten gelegenen Erdteils”

This possibly connected with Vedic *bhr̥ṣṭí-* “Spitze, Zacke” and ***b^hRek'-** [*LIV* 93 shärfen] (See EWA 2:273). If connected, it would literally mean “(the place) with the broad/wide peak/point”

Particles

***eti** LIPP 2:260-4 [*LIPP* von da aus; darüber hinaus, noch]

aiti; atiy OPers

***h₂ió-ti** LIPP 2:312-20 [*LIPP* welcher, der (INST)]

yeiti

***k^uo-ti** LIPP 2:452-79 [*LIPP* wer?; irgendwer]

čaiti

***mē-** (?) LIPP 2:511-8 Negative Conjunction [*LIPP* nicht]

mātya OPers [***-tjo-**]

***po.sk^ue-** or **pos.k^ue-** LIPP 2:66-86 [*LIPP* weg, fort, ab; zurück, wieder; hinter, nach]

pascqiθya [***-ntjo-** (?)]

***p(r)oti** LIPP 2:655-60

Simplex

paitika; paitita; paitiša ADV; *paiti* ADV; *patiy* 1 ADV; *patiy* 2 ADV; *paitiča; patiš; paitiš;*
paitiša; paitina

Complex with just paiti-

pāitivāka; hupaitišnāta; apaitita; paitidīta; paiti.šmuxta ; pāiti.šmuxta; paiti.zanta;
apaiti.zanta; apaiti.ərəta; paiti.vərəta; paiti.irista; ātryō.paiti.irista; paiti.vačišta;
paiti.yūidišta; paiti.dārišta; paiti.θwaršta; patipaḍa; paityāḍa; paitī.sēnda; paitinqm.xvarəθa;
paitipa; paitištana; paitiča.gaodana; paitinqm.gaodana; paiti.darana; paitiš.xvana;
paitištāna; paitištana; āmaiḍyōi.paitištāna; bipaitištāna; hupaitištāna; čaθwəra.paitištāna;
paitišana; paiti.darəzāna; paitiš.xvarəna; ayarəhō.paitišxvarəna; paityārəna;
paiti.pāpayamna; paiti.hištəmna; paiti.šmarəmna; paiti.ərəna; paityārō.təma; paiti.dayā;
čiθrō.paiti.dayā; paityaogəṭ.tbaēšahya; paitiš.hahya; paiti.raēθwa; patikara; paityāra;
paiti.vīra; paitī.aqθra; paiti.puθra; maṭ.paiti.frasa; paiti.varəha; paiti.dvaēšayantā; paitišta;
paitī.vyādā; patigrabanā; paiti.drā; paiti.vak; paitī.baudant; paiti.barant; paitišmārant;
paitišant; pātišhuvaray (Vṛddhi Patronymicus) “Name of an area or city”; *paiti.bišay;*

paiti.pāyav; maṭ.paiti.pārāsav; paitiṣ.harətar; paityāstar; paiti.fraxštar; paiti.astō.vačah ; paiti.ayah; paititavah; paiti.parštō.sravah; paiti.varah; paiti.drāθa; paiti.srīra; paiti.varəha; paityaršavant; paitiričyā; paitihinčāi; paiti.vazaiḍyāi; paitiṣāθrāi; paiti.jīme INF; paiti.baire INF; paitiṣəntəm ABS; paitiṣ.hərəzəm ABS; paiti.sarəhəm ABS; paityaogət; paityāpəm; paiti.yaš; paiti.astay; paityastay; paitištay

*Complexes with other ti-stems (these words are listed additionally under their non-***p(r)oti** roots)*

paiti.tarətayaē-ča INF; paitištātāe INF; paitištātayaē-ča INF; paitiṣcaptayaē-ča INF; paiti.pastay; paiti.ərətāe INF; paityāptay; paititay; paiti.jatay; paiti.dītay; paityāstayaē-ča INF; paityāstay; apaiti.busti (adv.); paiti.bərətay; paiti.zantay

***sue-** LIPP 2:751-62 “Selfish, individual/private” [LIPP selbst; sich (selbst)]

Simplex (root grade?)

xvaiθya [***-(ŋ)-tjo-**]

Numbers

***dui-tjo-** EWA 1:767-8; Also see Weiss (2011) p.365-7 “Second(ly), twice”

bityāi (adv.); *duvitīyam* [***-tjo-**] (adv.); *bitīm* (adv.); *āḍbitīm* (adv.); *āḷbitīm* (adv.); *duvitīya* [***-tjo-**]; *daibitya* [***-tjo-**]; *bitya* [***-tjo-**]

***h₃ek'to-** EWA 1:142 “Eighty”

aštaiθivant

***neun-** EWA 2:24-5; LIPP 2:582 “Ninety” [LIPP *nu "now" particle]

navaitivant [***-ti-uent-**]; *navatay*

***septm** EWA 2:700 “Seventy”

haptaiθya [***-tjo-**]; *haptaiθivant* [***-ti-uent-**]; *haptātay*

***suek's-** EWA 2:681; see Weiss 2009, p.370 “Sixty”

xšvaštivant [***-ti-uent-**] “60-fold”; *xšvaštay*

***tri-tjo-** See Weiss (2011) p.367-8 “Three”

θrityāi [***-tjo-**] (adv.); *θritīyam* [***-tjo-**] (adv.); *θritīm* (adv.); *āθritīm* (adv.) “three times”; *θritīya* [***-tjo-**] (adj.) “the third”; *θritya* [***-tjo-**] (adj.) “the third”

ITALIC

ITALIC INTRODUCTION

My data for Italic is primarily taken from Michiel De Vaan's *Etymological Dictionary of Latin and the other Italic Languages* (2008) in the *Leiden Indo-European Etymological Series*. In addition to this I sometimes refer to Alfred Ernout and Alfred Meillet's *Dictionnaire Étymologique de la Langue Latine: Histoire des Mots* (revised 4th ed. 2001), which I shall henceforth call *DELL*, although De Vaan more often than not has a reference to this work and I do not see the need to repeat it. As usual I have provided references where possible to *LIV* and *LIPP*. Also in the Leiden series, I make a reference once or twice to Guus Kroonen's *Etymological Dictionary of Proto-Germanic* (2013; henceforth *EDPG*), and also to Alwin Kloekhorst's *Etymological Dictionary of the Hittite Inherited Lexicon* (2008; henceforth *HIL*). I have found very useful Michael Weiss's book, *Outline of the Historical and Comparative Grammar of Latin* (2009), for clarifying sound changes, and his article *Cui bono? The beneficiary phrases of the Third Iguvine Table* from Alan Nussbaum's *Verba Docenti: Studies in Historical and Indo-European Linguistics Presented to Jay H. Jasanoff by Students, Colleagues, and Friends* (2007). The main Language attested here is of course Latin, although there is on occasion data from Oscan, Umbrian, and Paelignian.

ITALIC DISCUSSION

In this fairly small data set I have recorded 56 separate roots. 8 of these roots comprise of 2 numerals, 5 adverbs, and one pronoun. 2 items are adverbial in origin, but have become totally nominalized. Of the remaining 48 roots, 44 are simplex only, 3 are complexes only, and 1 is both. 1 is a verb that must have a *ti*-stem as its base. Although this is a very small sample (reflecting the low productivity of the suffix more than anything), it seems considerably more likely that Latin *ti*-stems will be simplex rather than complexes –contrary to Wackernagel's and von Bahder's theories.

In terms of root grades, 22 of the 48 nominal and adjectival forms are attested in the zero-grade, 14 in the *e*-grade, 5 in the *o*-grade, 2 in the *a*-grade, and 5 are unclear. The Latin data is fairly consistent with other IE data with the zero-grade predominating on the root.

***b^hrs-** EDL 203-4

See Sanskrit *bhr̥ṣṭí-* “point”, for example, which appears to come from ***b^hRek'-** [LIV 93 schärfen]. De Vaan connects the Sanskrit and Latin words with Germanic *ti*-stem for ‘bristle’ (e.g. OE *byrst*). It would be hard to accept ***b^hRek'-** for the root of the Latin and Germanic words phonologically, because we would not expect a ***k'** to end up as an [s] in these languages. We would expect a [ss] if the root had a final dental stop, which does not occur, so the root final consonant is almost certainly an ***s**. Semantically it seems attractive to connect the words, but the [s] would need to be explained. The assimilation of a palatovelar before ***t** itself is not particularly unusual (we see it in Sanskrit and Avestan, for example), but it almost certainly would have had to have occurred in a period before the merging of palatovelars with regular velars (i.e. before the split of Proto-Northern-IE, or the Centum-Satem split). *Fastīgō* is a denominal verb in which *ti*-stem ***fasti-** seems to be the base.

Simplex (Zero-grade root)

fastīgō Latin “to make pointed, taper”

***b^hristi-** EDL 216

Festīnō poses a number of challenges. It is assumed to be a verb derived from the adjective *festīnus* “hasty, quick, speedy” (which is attested later than the verb itself). If this is the case, it would be fair to assume that there was an original noun ***festi-** (or earlier ***fristi-**) from which *festīnus* was derived. Others have attempted to connect the root to ***b^hreiH-** [LIV 92-3 schneiden]. I would not rule out the possibility of a semantic shift from “to cut” to “to hurry/hasten”.

Simplex (Zero-grade root)

festīnō Lat “make haste, hurry”

***b^her-** EDL 236; LIV 76-7 [LIV tragen, bringen]

This etymology assumes a semantic shift from “that which is carried” to “luck, chance”.

Simplex (Zero-grade root)

fors fortis Lat “chance, luck”

***b^herg^h-** EDL 236-7; LIV 78-9 [LIV hoch werden, sich erheben]

This reconstruction is very tenuous. Part of the reason lies in the fact that Latin [f] can reflect ***d^h**, ***b^h**, and ***g^{uh}**. It is certainly possible therefore to reconstruct the root ***b^herg^h-** which LIV defines as “hoch

werden, sich erheben”. If we accept ***d^herg^h-** the only root that matches that form in LIV has the meaning “(sich) wenden” (p.146). De Vaan argues that the word may continue the root ***dreg^h-** “festhalten” (as reconstructed in LIV on page 126), although, to correspond to the Latin, the root would have to have been ***d^hreg^h-**, as ***d** generally ends up as [d] in Latin. LIV rightly argues that this root cannot continue an initial ***d^h** because of the Greek δράσσομαι “grip, take hold of”. The first relevant sound change in Greek from PIE must have been the devoicing of voiced aspirates. Second would have been the palatalization of all velars preceding a ***i** to [σ] (e.g. ***Ki** > [σσ]). Finally, if relevant, Grassmann’s Law (the deaspiration of the first aspirate occurring in the word with another aspirate: T^h...T^h becomes T...T^h) could apply. In the case of δράσσομαι, the devoicing of ***g^h** to ***k^h**, and the palatalization of the ***k^h** would have prevented the operation of Grassmann’s Law, and subsequently an aspirate would still remain if it had been there originally. For this reason I think it is unlikely that *fortis* reflects the root ***dreg^h-**, as attractive as it may seem semantically.

Simplex (Zero-grade root)

fortis Lat “strong, robust”

***b^heu₁d-** EDL 253; LIV 82 [LIV schlagen]

Simplex (Zero-grade root)

fūstis Lat “stick, rod”

***d^heh₁-** EDL 216-7; LIV 136-8 [LIV stellen, legen, setzen; herstellen, machen]

The semantic development from a verb meaning “to place, put, make” to a noun meaning “prescription” or “law” has a number of precedents. Compare Greek θέμις, for example, which has the same meaning and is in fact derived from the same verbal root. We might also compare English ‘law’ (‘that which is laid down’) which comes from a root ***leg^h-** [LIV 398-9 sich (hin)legen], or German Gesetz ‘Law, act, bill, statute’ which come from the same root as the English verb ‘to set’. This form is likely to be an *-āli-* stem in Latin, which was used to form denominal adjectives. We would expect the meaning “legal/treaty (priest)”.

Simplex (E-grade root)

fētiālis Lat “A Roman college of priests who sanctioned treaties and had diplomatic dealings with enemies”

***d^henh₂-** EDL 230-1; LIV 144-5 [LIV sich in Lauf setzen, sich davonmachen]

Simplex (O-grade root)

fōns fontis Lat “Well, fountain”

***d^hg^hej-** EDL 568; LIV 150-2 [LIV (durch Hitze) hinschwinden, zugrunde gehen]

The semantic development is from “to perish (through heat)” > “to be thirsty”.

Simplex (Zero-grade root)

sitis Lat “thirst”

***g^henh₁-** EDL 258, 400-1; LIV 163-5 [LIV erzeugen]

Nātīnor is quite possibly built from a ti-stem of this root (PIt ***gnā-ti-** < PIE ***g^hnh₁-ti-**) meaning “production”. It was then used to derive an adjective ***gnātīno-** “productive, busy”, and finally the verb.

Simplex (Zero-grade root)

cnatois (dat.pl.) Paelignian “son”; *natine* (abl.sg.) [***-ti-(H)on-**] Umbr “patrician family”;
nātīnor –ārī Lat (verb) “to be busy”; *nātiō* Lat [***-ti-on-**] “birth, species, race”

Simplex (E-grade root)

gēns –tis Lat “race, clan”;

2.?^hg^her- EDL 123; LIV 177 [LIV nehmen, holen]

De Vaan takes this as a compound of ***kom** and ***g^hṛ-ti-** “enclosure”. This root could be related to Latin *hortus* “garden”, Sanskrit *grhá-* “house”, Greek *χότρος* “enclosed place, farmyard”, and Modern English *yard*, but this would require the reconstruction of a non-palatalized root-initial ***g^h** for *cohors*.

Complex (Zero-grade root)

cohors -tis Lat “Farmyard, contingent, cohort”

***g^heu-** EDL 253; LIV 179 [LIV gießen]

Simplex (E-grade root)

fūtis Lat “vase”; *fūtilis* [***-ti-li-**] Lat “leaky”

1.?^hg^hes- EDL 291; LIV 198-9 [LIV essen, fressen, verzehren]

Some scholars (See EDL 291) argue for a root represented by the word for “hand” in a number of languages: **g^hes-* which would have an apparent verbal meaning of “to take, give in exchange” (see Sanskrit *hásta-* “hand”, for example, and Greek *χείρ* “hand” which some argue is an r-stem of the root **g^hes-r-*). This root does not seem to be attested as a verb (and subsequently has no mention in LIV), however, so we have to be careful. Despite this, it is quite unusual for PIE nouns not to be derived ultimately from a verbal root. Semantically such a root would be attractive as it can tie in a few other words such as *ξένος* “guest-friend, host, guest, stranger, foreigner” (from **g^hs-en-uo-*), Gothic *gasts* (Modern English *guest*) and, of course, the Latin words. The underlying meaning of **g^hosti-* would be “exchanging, exchange”, and usually has connotations of mutual exchange between Gods and people and, by extension, between one person and another. I think the semantics of the verb meaning “to eat, devour” are probably too strained to be connected with *hostis* and *hospes*.

Simplex (O-grade root)

hostis Lat “foreigner, enemy”

Complex (O-grade root)

hospes –itis Lat (perhaps from **g^(u)ost(i)-pot-*) “guest, visitor, host, entertainer”

**g^uem-* EDL 132; LIV 209-10 [LIV (wohin) gehen, kommen]

Complex (Zero-grade root)

contio –onis Lat [**-ti-on-*] “meeting, assembly”

1. **h₁ai-* EDL 28; LIV 229 [LIV geben; nehmen]

De Vaan reconstructs the root as **h₂ei-*, not **h₁ai-*. Generally speaking the Freiburg school from which LIV originated tries not to reconstruct **a* where possible, but does so in this case because of an apparent Hittite univerbified cognate *paiⁱ / pi-* (< **p(e)-h₁oi-*) “to give, pay, grant, hand over” which has no trace of a laryngeal. PIE verbal roots never began with a vowel, so we must assume a laryngeal was present. However, **h₂* and **h₃* would have left a trace, so we assume that the original laryngeal must have been **h₁*. **h₁* would never produce an **a* when preceding or following an **e* or **o*, so we must assume that the vowel was already an **a*. This etymology hinges on the whether or not the Hittite verb is related to words such as Greek *αἰνυμαι* “take”. Alwin Kloekhorst argues that it is not,

and that it is from a verb ***h₁ep-** (LIV 237) with an ***-ei-** suffix (HIL 614-6). In such a case it would be acceptable to take De Vaan's etymology here.

Simplex (A-grade root)

aeteis [gen.sg.] Osc "part, selection"

2.*h₁reh₁- EDL 514-5; LIV 251-2 [LIV rudern]

If this comes from a verb meaning "to row" as De Vaan suggests, we can probably reconstruct an instrumental function (i.e. "the thing with which you row"). Likewise, it would not be hard to reconstruct a locative function either (i.e. "the thing on/in which you row"). The locative sense is preserved in this meaning, however, and the presumably cognate *rēmus* "oar" (e-grade root and ***-mo-** suffix) seems to take the instrumental function.

Simplex (Zero-grade root)

ratis Lat "collection of wooden beams, raft; boat, ship"

***h₂eg'-** EDL 31; See Weiss (2007); LIV 255-6 [LIV treiben]

Simplex (E-grade root)

ahtis Umbr "Act"

1.*h₂er- EDL 55, 524; LIV 269-70 [LIV sich (zusammen)fügen]

Rītus has a zero-grade root, and probably an e-grade suffix in ***-ej-** (***h₂r-ej-**). It certainly resembles a *tu*-stem, although Ernout and Meillet (DELL 574) suggests that because the form *rīte* "with the proper rites, duly" always has a short [e], it must reflect a ***-ti-** or ***-t-** suffix; and, since *t*-stems are very rare in Latin outside compounds, it is argued that the ***-ti-** suffix is more likely.

Simplex (E-grade root)

ars, artis Lat "skill, art; trick"

Simplex (Zero-grade root)

rītus –tūs Lat "religious observances, rites"

***kat-** EDL 97

Rather than being a ti-stem, it is possible that this is an i-stem built on an old s-stem: ***kat-s-i-**. This is an attractive option, particularly if it can be connected to Latin *catēna* ‘chain’ < ***kat-es-na**. Roots with ***a** vowels are unusual in PIE.

Simplex (A-grade root ?)

cassis Lat “Hunting net”

***kl̥h₁-d^(h)-ti-** EDL 118; LIV 361-2 [LIV rufen]

This etymology is very tenuous. A ***d^(h)** is slightly unusual. However, Sanskrit *grhá-* (see below), for example, reflects a ***-d^ho-** morpheme. The semantic development would have to be something like this: a call > roll-call > soldiers called out > fleet.

Simplex (Zero-grade root)

classis Lat “Social class, levy, fleet”

***(s)kHu-t-i-** EDL 160

The evidence suggests that this is an i-stem built on a t-stem. The Germanic languages and Tocharian A (**kāc**) preserve a form in ***-t-i-**, whereas Baltic preserves a form in ***-t-o-**, and Greek in both ***-t-os-** and ***-t-**. The initial ***s** in the Celtic and Greek forms is a good example of the s-mobile.

Simplex (Zero-grade root)

cutis Lat “skin”

?*kreh₂- EDL 141; EDPG 258; LIV 367 [LIV aufhäufen, sammeln]

The reconstruction of this word is far from secure. Supposed Germanic cognates meaning “door” and “hurdle” respectively, **haurds** (Goth) and **hurd** (OHG), could well be from the root ***kert-** [LIV drehen, spinnen, p.356]. Guus Kroonen (EDPG) accepts the etymology **?*kreh₂-** for the Germanic data as well as for the Italic. Phonologically and semantically the Germanic forms are almost too similar to the Latin form to be chance resemblances: all forms show a zero-grade root and are feminine ti-stems, and all seem to point to a meaning of “wickerwork”. However, as a verb this root only seems to appear in Balto-Slavic. The Balto-Slavic forms attest a long ***ā**, hence the reconstruction of laryngeal ***h₂**. The Long ***ā** in Italo-Celtic arises regularly when a laryngeal follows

a syllabic ***ṛ** (PItC ***rā**) or ***ṛ** (PItC ***lā**), although there are other possibilities there as well. Perhaps the original PIE meaning would have been something like the result noun “assemblage”.

Simplex (Zero-grade root ?)

crātis –is Lat “Construction of wickerwork, hurdle”

***k^uieh₁**- EDL 508-9; LIV 393-4 [*LIV* ausruhen]

Simplex (E-grade root)

quiēs –ētis Lat “sleep, rest, repose”

***meh₁**- EDL 377; LIV 424-5 [*LIV* (ab)messen]

It is assumed that there was an original, unattested ti-stem (PIt ***mētis** “measurement”) from which this verb is derived.

Simplex (E-grade root)

mētior –irī Lat “to measure”

***meh₁i**- EDL 383; LIV 424-5 ? [*LIV* (ab)messen ?]

De Vaan mentions the possibility that this root is an extension of a *ie*-present of the verb ***meh₁**-. The only possible *ie*-present of ***meh₁**- that I am aware of is OCS *sv-mějo* “wagen”, and this is by no means secure, so I am somewhat sceptical of this etymology. It would also require a very creative explanation for the semantic development.

Simplex (E or Z-grade root)

mītis Lat “sweet and juicy, soft, gentle”

1.***men**- EDL 372; LIV 435-6 [*LIV* einen Gedanken fassen]

Simplex (Zero-grade root)

mēns mentis Lat “mind”

?3.***men**- EDL 388; LIV 437 [*LIV* emporragen]

This is another Latin o-grade ti-stem (cf. Young Avestan zero-grade ti-stem *mati*- “Vorsprung (des Gebirgs)”).

Simplex (O-grade root)

mōns montis Lat “mountain”

***neh_{2/3}(t)-** ? EDL 402

This word may be a ti-stem or an i-stem, depending on whether or not we reconstruct the root with a final ***t**. The reconstruction at this stage depends entirely on whether Greek *νότος* “back, wide surface” is related. Dunkel (LIPP 2:551) reconstructs *νότος* from ***ne-h₃k^u-o-** “nahe sichtbar” (> “Rücken”).

Simplex (Zero-grade root)

natis Lat “buttock”

***perh₃-** EDL 448; LIV 474-5 [LIV verschaffen]

Simplex (Zero-grade root)

pars –tis Lat “part, piece”

***pesti-** ? EDL 463

This has been compared with Avestan *kapastay* “name of an illness”. Potentially *kapastay* is an e-grade ti-stem with a *ka-* particle meaning “bad”, although this is by no means certain.

Simplex (E-grade root)

pestis Lat “death, plague, pestilence”

***peth₁-** EDL 450; LIV 477-8 [LIV fallen]

There is a semantic similarity between *patior* and *πῆμα* “misery, calamity”, although that is not enough to say they are related. *πῆμα* probably comes from ***peh₁-**, although there is no verb listed in LIV that has such a form. There is one with the form ***peH-** [LIV 459 sich bewegen]. It is not uncommon to use verbs of going to express verbs of suffering or enduring. Compare English “to undergo”, for example. Verbs of carrying seem to be most common though (e.g. support, bear, suffer).

Simplex (Zero/E-grade root)

patior, patī Lat “to undergo, experience”

***preiH-** EDL 493; LIV 490 [LIV vertraut, lieb sein/werden]

Complex (Zero-grade root)

proprītim Lat (fossilized acc.) [***-ti-m**] “properly”

***resg-** EDL 521; LIV 507 [LIV flechten]

Simplex (E-grade root)

restis Lat “rope, cord”

1.*seh₂(i)- EDL 540; LIV 520-1 [LIV satt werden]

Simplex (Zero-grade root)

satis Lat “enough, sufficient”

2.*ser- EDL 577; LIV 534-5 [LIV aneinander reihen, verknüpfen]

De Vaan connects *sors* to *serō* “to link, join”. Phonetically this seems fine, although semantically it needs some more discussion. ***sor-ti-** would have to mean something along the lines of a “joining”.

Simplex (Zero-grade root)

sors –rtis Lat “lot, lottery ticket, voting tablet”

***sliH- (?)** EDL 345-6

līs is attested in an early dative/ablative form as *stlitibus*, and as a nominative in *slis*. [sl] could be the regular Old Latin outcome of an initial ***sl**, but if we compare Latin *locus* [Old Latin *stlocus*] from ***st(e)l-** [LIV 594 hinstellen, bereit machen] we also should not rule out an original ***stl** cluster. De Vaan reconstructs *līs* as a ti-stem to a root ***sliH-**. De Vaan compares this to the Old Irish *lithech* “accused person, guilty person”, stating that both forms contain the same ***-ti-** suffix. Matasović reconstructs *lithech* as PC ***(s)lī-ti-(āko)-** (see EDPC 241). I am not aware of a satisfactory etymology for this root.

Simplex (Zero-grade root)

līs –tis Lat “lawsuit, dispute, accusation”

***spen(H)- ?** EDL 583

This word could be a t-stem or a ti-stem, since we find syncope of the ***i** following a resonant in Italic. There are no convincing etymologies for this word unfortunately.

Simplex (O-grade root)

spōns, -ntis Lat “will, volition”

***tejh₁-** EDL 620-1; LIV 617-8 [LIV heiß werden]

Simplex (Zero-grade root)

tītiō Lat [*-ti-on-] “piece of burning wood”

***trej(H)s-** EDL 630

This word has no convincing etymology.

Simplex (Zero/E-grade root)

trīstis Lat “depressed, unhappy”

*** $\text{ueh}_2\text{d}^{\text{h}}$ -** ? EDL 187; See Weiss (2007); LIV 664 [*LIV* durchschreiten]

Complex (E-grade root)

eikvasatis [abl.pl] Umbr “Gathering, meeting”

1.? ueik - EDL 675; LIV 670 [*LIV* aussieben]

This etymology is not certain. The proposed root, if correct, would suggest that the victim is the “sorted one”, which is not really a problem semantically. It would have to have two suffixes: ***-ti-** and ***-meh₂**.

Simplex (Zero-grade root)

victima Lat “sacrificial animal”

1.* uers - EDL 671; LIV 690-1 [*LIV* abwischen, fegen]

Complex (E-grade root)

vestigium Lat “footprint, track”

1.* ues - EDL 671-2; LIV 692-3 [*LIV* (Kleidung) anhaben, bekleidet sein mit]

Simplex (E-grade root)

vestis Lat “clothes”

3.* ues - EDL 671; LIV 693-4 [*LIV* grasen, weiden, verzehren, essen]

This root may reflect a ***-ti-** suffix, or a ***-to-** suffix, plus the instrumental/locative suffix ***-d^hlo-m**. Semantically this has been explained as referring to the pre-classical farm courtyard where animals would have been taken in and fed. It would therefore mean a “place of grazing, feeding”.

Simplex (E-grade root)

vestibulum Lat “forecourt, entrance”

***u₁eh₁-** EDL 683-4; LIV 695 [LIV umwickeln, umhüllen]

Simplex (Zero-grade root)

vītis Lat “grape vine”

Particles/adverbs

***ati** or ***ate** EDL 59; LIPP 2:93-6 [LIPP zurück, wieder; weg, fort]

at Lat “but”

***eti** EDL 195; LIPP 2:260-4 [LIPP von da aus; darüber hinaus]

et Lat ‘and what is more, too; and’; *et* Umbr (connects syntagms not sentences); *et* Paelig ‘and’

***h₂eu-ti** EDL 64; LIPP 2:334-45

aut Lat “and, or”; *auti*, *aut* Osc; *UTE*, *ote* Umbr

***k^ue-** EDL 511; LIPP 2:452-79 [LIPP wer?; irgendwer]

quot Lat “how many? As many as”; *quotidem* Lat; *quotiēns* Lat.

1.*per- EDL 459-60; LIPP 2:607-14 [LIPP durch, darüber, hinaus,über]

pert Osc; *pert* Umbr “until, near”

***pre-ti** EDL 488; LIPP 2:655-60 [LIPP hin; entgegen, gegenüber; zurück]

pretium Lat [***-ijo-**] “reward, prize, penalty” (< “against”)

***to-ti** EDL 625; LIPP 2:779-99 [LIPP besagter, der vorher Erwähnte]

tot Lat “that many, as many”

Numerals

***d_{ui}-t_{io}-** EDL 184, 684

The suffix of *duti* was probably copied by analogy from *terti*. *Vitium* may be an o-stem derived from a ti-stem, or perhaps it is derived from a to-stem. It must have originally had the meaning “divided, (broken) into two pieces”.

duti Umbr “for the second time”; *vitium* Lat “defect, fault”

***tri-t_{io}-** EDL 628, 184

terti Umbr; *tertius* Lat “third”

VEDIC

VEDIC INTRODUCTION

I have attempted in this study to find all examples of ti-stems that occur in the Rig Veda, a collection of the oldest Indic hymns. I have not stratified my data by date, partly because of the complexity and partly because I think it was a significantly sizeable and ancient (even the later hymns) data set with which to work. There were many challenges sorting each item:

1. It was not always possible to reconstruct a definite etymology (mostly due to phonological ambiguity, but also due to the fact that they may reflect an otherwise unattested verbal root), and therefore the morphological transparency was significantly reduced.
2. There was some ambiguity with endings, such as *-ati-*, which could reflect a theme vowel plus the **-ti-* suffix, or a **-(C)nt-* suffix plus an **-i-* suffix.
3. **-tjo-* suffixes could sometimes appear to reflect a **-ti-* suffix followed by a theme vowel and, in other cases, a variant of a **-to-* suffix.
4. Some items were obviously **-i-* stems build on **t* final roots. This may ultimately be the origin of **ti* stems, although these items can be ruled out of this study because their origin is not in doubt.

Most of my verbal root reconstructions follow those in *LIV*. Otherwise I follow Manfred Mayrhofer's *EWA*. When I reconstruct an adverb, I follow George Dunkel's recent *LIPP*. Each of my items is cross referenced with these works which provide much fuller discussions than I am able to provide here. It will hopefully be somewhat easier with this referencing system to track any errors I may have made. I have provided a general translation, although I will leave it to the reader to determine how each ti-stem item interacts with its preverb, or with another noun. I invite you to look at the exceptionally useful *Wörterbuch zum Rig-Veda* by Hermann Grassmann if you require more information. When in doubt I have also made use of Theodor Aufrecht's 1877 edition of the *Rig Veda*, and Stephanie W. Jamison and Joel P. Brereton's 2014 translation.

I have included 424 items in my list of complex ***-ti-** stems. By “complex” I refer to suffixed items that occur as a compound of some type: either with another noun, or with a preverb (consider Von Bahder’s idea that ***-ti-** stems naturally took preverbs). To complicate matters somewhat, I have also included items that have a ***-ti-** stem preverb. So, *prati-* compounds, for example, were also included. 47 of these items were included because of their ***-ti-** stem preverb. I will begin including items listed by PIE root, starting with nominals then moving to adverbs.

VEDIC ANALYSIS

In the Rig-Vedic data, I have found 123 roots of verbal, nominal, or adjectival origin (mostly verbal), 6 roots of adverbial origin, and 8 of numeric origin. There were 481 items in the first category. In the first category, 36 of the roots are attested solely with complex words, 48 are attested solely with simplex words, and 45 have both. I have 1 root in the undetermined category. Looking at the proportion of items that are complex and simplex understandably tells a different story: 113 items are simplex; 367 items are complex; 1 is unclear. This is not surprising considering that in compounds a word may be productive and can have a number of combinatorial possibilities. In a simplex, the only means of creating more than the one form is by combining morphology. I think the more important statistic is that if you were to build a ti-stem from any given root, the chances are slightly higher that you would form a simplex rather than a complex.

Looking at root grades, it is clear that the zero-grade is by far the most common, occurring on 97 of the 123 ti-stem roots. The undetermined e/o-grade ti-stem roots are attested 23 times, the e-grade ti-stem root 16 times, the o-grade 1 time, the a-grade 1 time, the lengthened (*Vrddhi patronymicus*) grade 3 times. There are 4 roots for which it is impossible to determine the grade, and 15 roots attest more than one grade. This supports the idea that ti-stems mostly had a zero-grade root.

VEDIC DATA

***b^hag-** EWA 2:241-2; LIV 65 “Allocation/distribution” [LIV als Anteil bekommen]

Simplex (A-grade root):

Suffix accent: *bhaktí*

***b^her-** EWA 2:246-9; LIV 76-7 “Bringing” [LIV tragen, bringen]

Simplex (Lengthened-grade root):

Root accent: *bhâratī* [personal name; *-e-ti- or *-n-ti-]

(Zero-grade root):

Suffix accent: *bhṛtī* “care”

Complex (Zero-grade root):

Vorderglied accent: *idhmábhṛti, prábhṛti, sábhṛti, upâbhṛti*

Suffix accent: *durbhṛtī*

***b^hreh₁g'-** EWA 2:279-80; LIV 92 “Blaze” [LIV erstrahlen, erglänzen]

Complex (E/O-grade root):

Vorderglied accent: *víbhraṣṭi*

***b^hRenk'-** EWA 2:273, 276-7; LIV 95 “Peak/point” [LIV abfallen]

Simplex (Zero-grade root):

Suffix accent: *bhṛṣṭí, bhṛṣṭimát* [*-ti-ment-]

Complex (Zero-grade root):

Vorderglied accent: *piśāṅgabhṛṣṭi, tigmábhṛṣṭi, sahásrabhṛṣṭi, sáturebhṛṣṭi*

***b^hueh₂-** EWA 2:255-6; LIV 98-101 [LIV wachsen, entstehen, werden]

Simplex (Zero-grade root):

Suffix accent: *bhūtí* “welfare”

Complex (Zero-grade root):

Hinterglied accent: *abhibhūtyójas*

Vorderglied accent: *prábhūti, áprabhūti, ábhūti, abhíbhūti, páribhūti, víbhūti, ánānubhūti, svábhūtyojas*

***deh₁-** EWA 1:63; LIV 102 “Binding/Bond” [LIV binden]

Complex (Zero-grade root):

Vorderglied accent: *áditi, āditeyá, adititvá, ādityájūta*

***deh₂(i)- ?** EWA 1:724; LIV 103 “Name of a God” [LIV teilen]

Simplex (Zero-grade root):

Root accent: *díti*

***deh₃-** EWA 1:713-4; LIV 105-6 “Giving/gift” [LIV geben]

Complex (Zero-grade root):

Vorderglied accent: *bhágatti, maghátti, vásutti*

(E-grade root):

Vorderglied accent: *havyádāti, dātivāra*

***dej₂-** EWA 1:742-3; NIL 69-81 “Gathering of Gods” [NIL hell (sein), scheinen]

Simplex (E/O-grade root):

Suffix accent: *devátāti* [***dej₂-u₂-e-** + *-tāti-*]

***dejh₂-** EWA 1:701; LIV 108 “Lighting/light” [LIV aufleuchten]

Complex (Zero-grade root):

Reduplicated root: *sudḍiti*

Suffix accent: *sudṭī*

***deik'- (1)** EWA 1:744-6; LIV 108-9 “Instruction” [LIV zeigen, weisen]

Complex (Zero-grade root):

Vorderglied accent: *bhandádiṣṭi, krandádiṣṭi, sādhadīṣṭi, smáddiṣṭi*

***der-** EWA 1:741 “Leather water skin” < “skin”

Simplex (Zero-grade root):

Root accent: *dr'ṭi*

***derk'-** EWA 1:704-6; LIV 122 “Vision/Seeing” [LIV hinblicken, erblicken]

Simplex (Zero-grade root):

Suffix accent: *drśatī* [***-e-ti-** ?]

Complex (Zero-grade root):

Vorderglied accent: *brâjadṛṣṭi, sámḍrṣṭi*

***deRp-/dRep-** EWA 1:703 “Blinding” [EWA Tollsein, Verblendung]

Complex (Zero-grade root):

Vorderglied accent: *prádrpti*

***deuh₂-** EWA 1:738; LIV 123 “Messenger (f)/Summoner (f)” [LIV zusammenfügen]

Simplex (Zero-grade root):

Suffix accent: *dūtī* [*-ti-h₂]

***d^heg^{wh}-eH-** EWA 1:430; LIV 133 “Blaze/Burning” [*LIV* mit Feuer behandeln, verbrennen (tr.)]

Simplex (Zero-grade root):

Unspecified accent: *kṣāti*

***d^heh₁-** EWA 1:783-7; LIV 136-8 “Deposit/Appointment” [*LIV* stellen, legen, setzen; herstellen, machen]

Complex (Zero-grade root):

Vorderglied accent: *vanádhati, nemádhati, mitrádhati, svádhati, dīdhiti, vásudhati, deváhiti, asméhiti, puróhiti*

***d^hej₁H-** EWA 1:777-8; LIV 141-2 “Thought/Meditation/Contemplation” [*LIV* ins Auge fassen]

Simplex (Zero-grade root):

Suffix accent: *dhīti*

Complex (Zero-grade root):

Vorderglied accent: *ṛtádhīti*

***d^heq₁-** EWA 1:789-90; LIV 147-8 “River/stream” [*LIV* laufen, eilen]

Simplex (E/O-grade root):

Suffix accent: *dhōti*

***d^heq₁H-** EWA 1:782-3; LIV 149-50 “Agitator/stirrer/shaker” [*LIV* rasch hin und her bewegen, schütteln]

Simplex (Zero-grade root):

Root accent: *dhūti*

***d^hg^{wh}ej₁-** EWA 1:428; LIV 150-2 “Death/Demise” [*LIV* (durh Hitze) hinschwinden, zugrunden gehen]

Complex (Zero-grade root):

Preverb/Vorderglied accent: *ákṣiti*

***d^hreq₁- (2)** EWA 1:802; LIV 156 “Deception” [*LIV* irreführen]

Simplex (Zero-grade root):

Root accent: *dhṛúti*

?*d^hq₁er- EWA 1:802; LIV 159-60 “Injury/malice” [*LIV* beschädigen, verletzen]

Simplex (Zero-grade root):

Suffix accent: *dhūrtí*

***g'enh₁-** EWA 1:601-2; LIV 163-5 “Close blood relative” [*LIV* erzeugen]

Simplex (E/O/Zero-grade root):

Suffix accent: *jñātí*

?*g'eṁH- EWA 1:580-1; LIV 166 “Haste/Zeal” [*LIV* sich in schnelle Bewegung setzen]

Simplex (Zero-grade root):

Suffix accent: *jūtí*

Complex (Zero-grade root):

Unspecified accent: *pratijūtivarpas*

Vorderglied accent: *vr'ṣajūti*

***g'eṁs-** EWA 1:599; LIV 166-7 “Favour” [*LIV* kosten]

The Vedic verb has the meaning of “gern haben, Gefallen finden, genießen”, which developed from a root meaning “to taste”.

Simplex (Zero-grade root):

Root accent: *júṣṭi* “Gunst, Liebeserweisung”

Complex (Zero-grade root):

Vorderglied accent: *ájuṣṭi, havyájuṣṭi*

***g^heb^h-** EWA 1:463-4; LIV 193 “Hand/fist” [*LIV* fassen, nehmen, geben]

This word, if it can be reconstructed to ***g^heb^h-**, must have a suffix in ***-e₀s-**.

Simplex (E-grade root):

Root accent: *gábhasti*

Complex (E-grade root):

Vorderglied accent: *pūrṇágabhasti, syûmagabhasti, súbabhasti*

Root accent: *sugábhasti, gábhastipūta*

***g^hrebh₂-** EWA 1:505-7; LIV 201 “Captivity” [*LIV* ergreifen]

Simplex (Zero-grade root):

Suffix accent: *grbhītātāti* [-ītá-tāti- (-tāti- added to a past participle)]

***g^hei-** EWA 2:802-3; LIV 174 “Missile/Weapon” [LIV antreiben]

Simplex (E-grade root):

Suffix accent: *hetí*

Complex (E-grade root):

Vorderglied accent: *tigmáheti*

***g^hes-** EWA 2:812 “Hand/Fist”

Simplex (E/O-grade root):

Suffix accent: *hastín* [***-ti-n-**]

Complex (E/O-grade root):

Suffix accent: *ubhayāhastí, mahāhastín* [***-ti-n-**]

Unspecified accent: *suhasṭī*

***g^heu-** EWA 2:808-9; LIV 179 “Sacrificial gift (presumably fat or butter) –a pouring” [LIV gießen]

Complex (Zero-grade root):

Hinterglied accent: *āhutīvŕ̥dh*

Vorderglied accent: *práhuti, áhuti, ūrjáhuti, ánāhuti*

***g^hueH-** EWA 2:809-10; LIV 180-1 “Calling” [LIV rufen]

Complex (Zero-grade root):

Vorderglied accent: *dyumnáhūti, yāmahūti, bhárahūti, índrahūti, deváhūti, pūrváhūti, sáhūti*

***g^huer-** EWA 2:824-5; LIV 182 “Crookedness” [LIV krumm gehen]

Complex (Zero-grade root):

Vorderglied accent: *abhíhruti* (metathesized), *párihvṛti*

***g^hieH-** EWA 1:602-3; LIV 167 “Robbing” [LIV berauben]

Simplex ? (Zero-grade root):

Suffix accent: *jyeṣṭhátāti* [-tāti-]

Complex (Zero-grade root):

Vorderglied accent: *ájīti*

***g^uei-** EWA 1:573-4; LIV 206-7 “Win/Victory” [LIV (be)siegen, gewinnen]

Simplex (Zero-grade root):

Root accent: *jíti*

Complex (Zero-grade root):

Vorderglied accent: *purójiti*

***g^uem-** EWA 1:465-6; LIV 210 "Going/Walking" [LIV (wohin) gehen, kommen]

Simplex (Zero-grade root):

Root accent: *gáti*

Complex (Zero-grade root):

Root accent: *āgáti, samgáti*

***g^uerH-** EWA 1:468-9; LIV 210-1 "Praising/Showing approval" [LIV Zustimmung bekunden]

Simplex (Zero-grade root):

Suffix accent: *gūrtí*

Complex (Zero-grade root):

Unspecified accent: *viśvagūrti*

Vorderglied accent: *abhígūrti*

***g^uerh₃-** EWA 1:469-70; LIV 211-2 "Devourer" [LIV verschlingen]

Simplex (E/O-grade root):

Reduplicated root: *jígarti*

***g^uṚs-ti ?** EWA 1:494 "Heifer/Young Cow -Cow that has calved once"

Simplex (Zero-grade root):

Suffix accent: *gr̥ṣṭí*

(Lengthened grade root):

Suffix accent: *gārṣṭeyá* (adj.) –appears as a *vṛddhi patronymicus*.

***g^{uh}en-** EWA 2:800-1; LIV 218-9 "Murder/Assault" [LIV schlagen]

Complex (Zero-grade root):

Vorderglied accent: *áhati, vātrahatya* [***-tī-o-**]

***h₁eǵ-** EWA 1:102; LIV 232-3 "Going/walking" [LIV gehen]

Simplex (E-grade root):

Root accent: *éti* 'arrival'

(Zero-grade root):

Suffix accent: *ityâ* [*-tj-eh₂-] ‘path/approach’

Complex (Zero-grade root):

Vorderglied accent: *prāti-iti, ádhi-iti, abhí-iti, úpa-iti, pára-iti, úd-iti, prētiīṣaṇi, r’jīti, turvīti, dabhīti*

Root accent: *dhuna-íti, pra-íti*

***h₁eṣh₂- (or *h₂eṣ-)** EWA 1:270-2; LIV 234 (or 260) “Quest/Search/Hunt” [*LIV* kräftigen; antreiben (OR suchen)]

Simplex (Zero-grade root):

Suffix accent: *iṣṭí*

***h₁erk^h-** EWA 1:114-5; LIV 240-1 “Singing” [*LIV* strahlen, singen]

Complex (Zero-grade root):

Vorderglied accent: *námovṛkti*

Suffix accent: *suvṛktí*

***h₁es-** ?? EWA 2:759; LIV 241-2 “Relative/Dependent/Household” [*LIV* dasein, sein]

Complex (Zero-grade root):

Hinterglied accent: *stipâ* “Schützer der Angehörigen”

***h₁eṣH-** EWA 1:134; LIV 243-4 “Help/Favour/Assistance” [*LIV* helfen, fördern]

Simplex (Zero-grade root):

Suffix accent: *ūtí*

Complex (Zero-grade root):

Vorderglied accent: *ákṣitaūti, itáūti, sadyáūti, ánūti, śatámūti, sahásramūti, ántyūti, gávyūti, urúgavyūti, áchidrūti, sahásrūti, urv́yūti*

Root accent: *śataū’ti, citraū’ti*

Suffix Accent: *suūtí, agavyūtí, parogavyūtí*

***h₁rem-** EWA 2:435-6; LIV 252-3 “Rest” [*LIV* ruhig werden]

Simplex (E/O-grade root):

Root suffix: *ránti*

***h₁ues-** EWA 2:533-4; NIL 253-8 “(Assemblage of) good ones > Gods” [Good]

Simplex (E-grade root):

Suffix accent: *vasútāti* [***-u-** + *-tāti-*]

***h₂eis-** EWA 1:270-1; LIV 260 “Search/Finding” [LIV suchen]

Simplex (Zero-grade root):

See ***h₁eish₂-** *iṣṭí*

Complex (Zero-grade root):

Vorderglied accent : *vásyaiṣṭi*, *pásvaiṣṭi*, *ásvamiṣṭi*, *gáviṣṭi*, *díviṣṭi*

Root accent : *āiṣṭi* (*éṣṭi*)

***h₂emg^h-** EWA 1:38; LIV 264-5 [LIV (zu)schnüren > beengen]

Simplex (E-grade root ?):

Suffix accent: *aṇhatí* [***-e-ti-**, but hard to rule out ***-ṇti-** too] “Bedrängnis”

***(s)neh₂-** EWA 1:163; LIV 572-3 “Duck” [LIV baden, schwimmen]

Mayrhofer (EWA) reconstructs this root as ***h₂enh₂-**. For a good discussion of this root see Katz (2004). I am inclined to follow Katz with his reconstruction of ***(s)neh₂-**. It is certainly attractive that *ātí* can be connected with an attested verbal root. Vedic shows the s-mobile in *snāti* “badet”, but apparently not in *ātí*.

Simplex (Zero-grade root):

Suffix accent: *ātí*

1.*h₂er- ? EWA 1:105-6; LIV 269-70 “Going” [LIV sich (zusammen)fügen]

Simplex (E-grade root):

Suffix accent: *aratí* ‘spoke of the wheel’ (Beiwort for Agni)

Complex (Zero-grade root):

Vorderglied accent: *sámṛti*

1.*h₂et(H)- ? EWA 1:57-8; LIV 273 “Spirit” [LIV gehen, wandern]

This is often compared to Avestan *asti-* “Gast”, and is probably identifiable in the *-atti* part of some Mitanni-Aryan personal names (e.g. *ašuratti*, *mittaratti* which may reflect *asurātithi* and *mitrātithi* respectively). It is possible that ***h₂etH-t(e)h₂-** is the etymology. Dunkel (LIPP 2:331) also mentions proposals of ***ati-sth₂-i-** “one who stands away”, but this would not explain the Avestan form. Dunkel suggests a form PIIr ***Há-tH-ti-** “Gast” (< “Zugetretener”) which would reflect PIE ***h₂ó-sth₂-ti-**

“Das Danebenstehen”. Ultimately all these suggestions have problems (e.g. presence of the first [i] in Vedic and its lack in Avestan and Mitanni-Aryan, or the presence of the [s] in Avestan, but not in Vedic and Mitanni-Aryan).

Simplex (E-grade root):

Root accent: *átithi*

Complex (E-grade root):

Unspecified accent: *mitrātithi*

Vorderglied accent: *médhātithi, nîpātithi, médhyātithi*

***h₂i-u-h₃n-** EWA 2:413-4; NIL 278 “Young woman” [*NIL* jugentlich(e); junge Frau]

Simplex (Zero-grade root):

Suffix accent: *yuvatí*

***h₂nek'-** EWA 2:27-8; LIV 282-4 “Attainment/achievement” [*LIV* erreichen]

Complex (Zero-grade root):

Vorderglied accent: *jarádaṣṭi*

***h₂uers-** EWA 2:522-3; LIV 291-2 “Rain” [*LIV* regnen]

Simplex (Zero-grade root):

Suffix accent: *vṛṣṭí, vṛṣṭimát* [***-ti-ment-**]

Complex (Zero-grade root):

Unspecified accent: *vṛṣṭihanya*

Hinterglied accent: *vṛṣṭiváni*

Vorderglied accent: *svávṛṣṭi, vṛṣṭídyo*

***h₂ues- (1)** EWA 2:530; LIV 292-3 “Flashing/lighting up/Dawn” [*LIV* (morgens) hell werden]

Complex (Zero-grade root):

Vorderglied accent: *vy'usṭi*

***h₂ues- (2)** EWA 2:531-2; LIV 293-4 “Nest/abode” [*LIV* (ver)weilen, die Nacht verbringen]

Simplex (E-grade root):

Suffix accent: *vasatí* [***-e-ti-** or ***-nt-i**]

***h₃er- ?** EWA 1:105-6; LIV 299-301 “Going” [*LIV* sich in (Fort-) Bewegung setzen]

Complex (Zero-grade root):

Hinterglied accent: *ṛtīsáh*

Vorderglied accent: *nírṛti, ávarti*

***h₃peus-** EWA 2:171-2; LIV 303-4 “Prosperity/Growth/Increase” [*LIV* sich mehren, reich werden an]

Simplex (Zero-grade root):

Suffix accent: *puṣṭí, puṣṭimát* [***-ti-ment-**], *puṣṭimát* (personal name) [***-ti-ment-**]

Complex (Zero-grade root):

Hinterglied accent: *puṣṭimbhará, puṣṭivárdhana*

Vorderglied accent: *puruvârapuṣṭi*

Root accent: *púṣṭigu*

***h₃rejH-** EWA 2:437-8; LIV 305-6 “Flow” [*LIV* wallen, wirbeln]

Simplex (Zero-grade root):

Suffix accent: *rītí*

(*E/O-grade root*):

Suffix accent : *retín* ‘semen-laden’

***Hers-** EWA 1:123-4; LIV 224 “Spear” [*LIV* stoßen]

Simplex (Zero-grade root):

Suffix accent: *ṛṣṭí, ṛṣṭimát* [***-ti-ment-**]

Complex (Zero-grade root):

Suffix accent: *ṛṣṭívidyut*

(*Vṛddhi patronymicus*):

Unspecified accent: *ārṣṭiṣena*

***Hjag'-** EWA 2:392-3; LIV 224-5 “Sacrifice” [*LIV* verehren]

Simplex (Zero-grade root):

Suffix accent: *íṣṭi*

***H_uer-, *_uel-, or 1.*_uer-** EWA 2:512-3; LIV 227-8; 674; 684-5 “Opening (of the cattle-pen)” [*LIV* einschließen, stecken, hineintun; einschließen; aufhalten, (ab)wehren]

Complex (Zero-grade root):

Vorderglied accent: *ápāvṛti*

?***iem-** EWA 2:399-400; LIV 312 “Control/Guidance/Management” [*LIV* ausstrecken, hinstrecken]

Simplex (Zero-grade root):

Root accent: *yāti* “A race of people associated with the Bṛghu (half-Gods)”

Complex (Zero-grade root):

Vorderglied accent: *práyati, ā’yati*

Suffix accent: *parāyāti*

?2.***ieṃ-** EWA 2:403-4; LIV 314-5 “Carelessness/Negligence” [*LIV* (sich) fernhalten; weichen]

Complex (Zero-grade root):

Vorderglied accent : *práyuti*

***ieṃg-** EWA 2:417-8; LIV 316 “Connecting/binding” [*LIV* anschirren]

Complex (Zero-grade root):

Vorderglied accent: *ṛtáyukti, práyukti, sváyukti*

***keh₂-** EWA 1:334; LIV 343 “Desiring/Desire” [*LIV* begehren]

Complex (E/O-grade root):

Vorderglied accent: *ṛnákāti, kā’makāti*

***k'eh₃(i)-** EWA 2:627; LIV 319-20 “Sharpening/adjustment” [*LIV* schärfen]

Complex (Zero-grade root):

Unspecified accent: *śitipṛṣṭha*

Hinterglied accent: *śitipád*

Vorderglied accent: *nísiti*

***k'eHs-** EWA 2:632-3; LIV 318-9 “Direction/Instruction” [*LIV* anweisen]

Complex (Zero-grade root):

Vorderglied accent: *súśiṣṭi*

1.***k^(u)eit-** ? EWA 1:542 “Onomatopoeic –chit-chit”

Simplex (Zero-grade root):

Suffix accent: *cittí*

2.*k^(u)ēit- ? EWA 1:548 “Plant or textile name”

Simplex (Zero-grade root):

Root accent: *cītti* [accent contrastive with above item]

***k'ek^(u)-** EWA 2:600-1; LIV 322 “Ability/Skill” [LIV etwas schaffen, bewältigen]

Simplex (E/O-grade root):

Suffix accent: *śakti*

Root accent: *śakti, śaktīvat* [***-ti-H- ʔent-**]

Complex (E-grade root):

Root accent: *suśakti*

Suffix accent: *āśakti*

***k'ek^(u)-** ? EWA 2:603 “A type of bird”

Simplex (E-grade root):

Suffix accent: *śakūnti*

***k'eNs-** EWA 2:599-600; LIV 326 “Song of praise” [LIV verkünden; (öffentlich) schätzen]

Simplex (Zero-grade root):

Suffix accent: *śasti*

Complex (Zero-grade root):

Hinterglied accent: *praśastikṛ't, abhiśastipāvan, abhiśastipā*

Vorderglied accent: *śasti, praśasti, abhiśasti*

Suffix accent: *suśasti*

1.*kerH- EWA 1:310-1; LIV 353 “Praise” [LIV rühmend gedenken]

Simplex (Zero-grade root):

Suffix accent: *kīrti* “?”

Complex (Zero-grade root):

Suffix accent: *sukīrti*

***(s)kert-** EWA 1:315-6; LIV 559-60 “Hide/Skin” [LIV (zer)schneiden]

Simplex (Zero-grade root):

Root accent: *kṛ'tti*

***(s)k'up-ti** EWA 2:647 “Shoulder”

Simplex (Zero-grade root):

Root-accent: *śúpti*

***k'jeH-** EWA 2:660-1; LIV 331-2 “Chilly” [LIV gefrieren]

This feminine is probably modelled on a masculine form *śítaka*, which in turn would be derived from a to-stem (e.g. *śítá-* “Kalt”).

Simplex (Zero-grade root):

Unspecified accent: *śítikāvat* [***-t-ikā-ṽnt**]

***k'leṽ-** EWA 2:666-7; LIV 334-5 “Hearing/Listening” [LIV hören]

Simplex (Zero-grade root):

Root accent: *śrúti*

Complex (Zero-grade root):

Vorderglied accent: *úpaśruti*

***k'leṽs-** EWA 2:672; LIV 336 “Compliance/Obedience” [LIV (zu)hören]

Simplex (E/O-grade root):

Root accent: *śrôṣṭi*

(Zero-grade root):

Suffix accent: *śruṣṭí*, *śruṣṭimát* [***-ti-ment-**], *śruṣṭīván* [***-ti-H-ṽen-**]

Complex (Zero-grade root):

Vorderglied accent: *viśváśruṣṭi*

Root accent: *śrúṣṭigu*

***k'ṽeh₁-** EWA 2:609-10; LIV 339-40; “Blessing/Wellbeing/Wealfulness” [LIV anschwellen]

śámṭāti is built on the indeclinable particle *śám*. Mayrhofer (EWA) connects this particle with the Sanskrit verb $\sqrt{\text{śav}^i}$ (<***k'ṽeh₁-**). The semantic development would be from “increase, swelling” to “prosperity, blessing”.

Simplex (E/Zero-grade ?)

Root accent: *śámṭāti* [**-tāti-**]

1.*k^uej- EWA 1:531, 532-3; LIV 377-8 “Respect/Showing honour” [*LIV* wahrnehmen, bemerken]

Complex (Zero-grade root):

Vorderglied accent: *ápaciti*

***k^uejt-** EWA 1:547-8; LIV 382-3 “Thought/Thinking/Insight” [*LIV* bemerken, erkennen]

Complex (Zero-grade root):

Vorderglied accent: *ácitti, pūrvyácitti*

***k^uelh₁-** EWA 1:307-9; LIV 386-8 “Completion/Doing/Making” [*LIV* eine Drehung machen, sich umdrehen, sich (um-, zu-)wenden]

Simplex (Zero-grade root):

Suffix accent: *kṛtyâ* [***-tjeh₂**], *kṛtí*

Complex (Zero-grade root):

Vorderglied accent: *bráhmakṛti, âkṛti, apâkṛti, dvâdaśākṛti, svâhākṛti, áramkṛti, váṣaṭkṛti, íṣkṛti, níṣkṛti, havíṣkṛti, háskṛti, svâhākṛtī* (***-ti-h₂**)

Unspecified accent: *kuhayākṛti*

Suffix accent: *carkṛtí* (reduplicated), *sukṛtyâ* (***-tjeh₂**)

***k^uels-** EWA 1:319-20; LIV 388-9 “Ploughman > men/people” [*LIV* Furchen ziehen, einfurchen]

Simplex (Zero-grade root):

Suffix accent: *kṛṣṭí*

Complex (Zero-grade root):

Unspecified accent: *kṛṣṭyojas*

Hinterglied accent: *kṛṣṭiprâ, kṛṣṭihán*

Vorderglied accent: *viśvákṛṣṭi*

***k^uieṭ-** EWA 1:552-3; LIV 394-5 “Rapid Movement (of the hand)” [*LIV* sich in Bewegung setzen]

Complex (Zero-grade root):

Vorderglied accent: *hástacyuti*

***meh₁-** EWA 2:341-3; LIV 424-5 “Real knowledge” [*LIV* (ab)messen]

Complex (Zero-grade root):

Vorderglied accent: *sámiti, súmiti*

(E-grade root):

Vorderglied accent: *ásamātyojas*

1.*mei- EWA 2:314; LIV 426 “Fixing (of the posts)” [LIV befestigen]

Simplex (Zero-grade root):

Suffix accent: *mití*

1.*men- EWA 2:296-7; LIV 435-6 “Thought/thinking/intention/meditation/sense” [LIV einen Gedanken fassen]

Complex (Zero-grade root):

Unspecified accent: *mahimati, bṛhanmati, durmati*

Hinterglied accent: *abhimatisâh*

Vorderglied accent: *arámati, prámati, ádabdhavratapramati, dáśapramati, átimati, ánumati, codayánmati*

Suffix accent : *sumatí, devasumatí, amatīvân* (*-ti-H-ŷen-)

(E-grade root):

Hinterglied accent: *abhimātihán, abhimātiṣāhá, abhimātiṣāhya, upamātiváni*

Vorderglied accent: *úpamāti, ásamāti, abhímāti*

Suffix accent: *abhimātín*

***mer-** EWA 2:318-9; LIV 439-40 “Death/Death personified” [LIV verschwinden, sterben]

Simplex (Zero-grade root):

Unspecified accent: *mṛtyu*

Suffix accent: *mṛtyú*

***meṣH-** EWA 2:363; LIV 445 “Closed hand/fist” [LIV aufheben, wegnehmen]

Simplex (Zero-grade root):

Suffix accent: *muṣṭí*

Complex (Zero-grade root):

Hinterglied accent: *muṣṭihán, muṣṭihatyâ*

***nejH-** EWA 2:17-8; LIV 450-1 “Leadership” [LIV führen, leiten]

Complex (Zero-grade root):

Vorderglied accent: *várpañīti, pránīti, supránīti, sahásrañīti, ádabdhanīti, śárdhanīti, vāmánīti, súnīti, ásunīti*

Suffix accent: *sunī́ti, rjunī́ti*

***neR(t)-** EWA 2:21-2 “Dance”

Simplex (Zero-grade root):

Suffix accent: *nṛ́ti* [could be an i-stem if final ***t** is a part of the root]

***nes-** EWA 2:796-7; LIV 454-5 “Well-being/Blessing” [*LIV* davonkommen, unbeschadet heimkehren]

Simplex (Zero-grade root):

Root accent: *ástatā́ti* [***-te-** + *-tāti-*]

Complex (Zero-grade root):

Hinterglied accent: *svastigâ, svastidâ, svastivâh*

Suffix accent: *svastí, svastimát* [***-ti-ment-**]

***neṡ-** ? EWA 2:26; NIL 524-6? “Praise-song?” [*NIL* neu]

This is a hapax for which there is no sure etymology. Some argue that is a derivative of Vedic *náva-* “new”, while others propose a truncated compound of *ná(va)-* “new” and *viṣṭi-* “Dienstleistung, Arbeit, Tätigkeit”. I prefer the second option, but I would not rule out a ti-stem being built on a neuter *-is-* action noun (e.g. *arcís* “flame” < ***h₁erk^u-** [*LIV* 240-1 strahlen, singen]). Usually ti-stem simplexes have the accent on the suffix, and usually complexes have the accent on the first element of the compound, so I think this is some slight evidence in support of the compound etymology.

Simplex ? (E-grade root):

Root accent: *náviṣṭi*

***peh₂(j)-** EWA 2:112-3; LIV 460 “Protection” [*LIV* schützen, hüten, weiden (tr)]

Some scholars derive *páti* from the root ***peh₂-** meaning “protect”. Lubotsky dismisses *páti* as an i-stem of ***pot-**.¹⁰⁶

Simplex (E-grade root):

Root accent: *páti, pátivat* [***-ti-ṡent-**] “lord/husband”

¹⁰⁶ A. M. Lubotsky, *The System of Nominal Accentuation in Sanskrit and Proto-Indo-European* (1988), p.30.

Suffix accent: *patitvá* [*-tī-tue-] “marriage”

Complex (Zero-grade root): “protector”

Vorderglied accent: *nr'pīti*

(E-grade root ?) “husband/lord”

Unspecified accent: *madapati, mitrapati, aśvapati, svadhāpati, urvarāpati, ājipati, rtupati, sindhupati, indrābrahmanapati, ṛtaspati, rādhaspati, patiloka, ādhipatya*

Hinterglied accent: *patidvīs, patitvaná* (perhaps a simplex), *pativídya*

Vorderglied accent: *vā'japati, vrājapati, yajñapati, gaṇapati, gāthapati, medhapati, sōmapati, svāpati, dākṣapati, grhāpati, prajā'pati, nidhā'pati, páripati, śácīpati, vásupati, gópati, śrāvayátpati, sátpati, dámpati, súarpati, pū'rpati, havíṣpati, ráthaspati, jā'spati, kṣêtrapatya* [*-tīo-], *gārhapatya* [*-tīo-]

Suffix accent: *sugārhapatyá* [*-tīo-], *jāspatyá* [*-tīo-], *svapatyá* [*-tīo-]

Root accent: *rayipáti, nrpáti, viśpáti, pátijuṣṭa, br'haspátiprasūta* (double accent), *sádaspáti* (double accent), *vānaspáti* (double accent), *śubhāspáti* (double accent), *br'haspáti* (double accent), *indrābr'haspáti* (double accent), *jā'spáti* (double accent), *gnā'spáti* (double accent)

***peh₃(i)-** EWA 2:113-4; LIV 462-3 “Drink” [LIV trinken]

Simplex (Zero-grade root):

Suffix accent: *pīti*

Complex (Zero-grade root):

Vorderglied accent: *ápīti, sōmapīti, pūrvápīti, sápi*

***pek^u- (1)** EWA 2:64; LIV 468 “Cooked food” [LIV reif machen, gar machen]

Simplex (E/O-grade):

Suffix accent: *paktí*

***perh₃-** EWA 2:90-1; LIV 474-5 “Gift” [LIV verschaffen]

Simplex (Zero-grade root):

Suffix accent: *pūrtí*

***peRk'-** or ***pRek'** EWA 2:165 “Rib”

A lot about this word is obscure. An *s final root should not be ruled out either.

Simplex (Zero-grade root):

Suffix accent: *prṣṭí*

1.*reh₁- EWA 2:446-7; LIV 499 “Gift/Favour/Giving entity” [LIV geben, schenken]

Simplex (E/O-grade root):

Suffix accent: *rātí, rātín* “comprising of [sacrificial] gifts”

Complex (E/O-grade root):

Hinterglied accent: *rātiṣâc*

Vorderglied accent: *smādrātiṣâc, vísṛṣṭarāti, mánhiṣṭharāti, víbhūtarāti, citrārāti, ánarśarāti, sárāti, śróturāti*

Unspecified accent: *pīsaṅgarāti, pūṣarāti, arātīy* [*-ti-h₂]

Suffix accent: *svādurāti, surāti, arātīván* [*-ti-H-uen-]

***rejs-** EWA 2:462-3; LIV 505 “Harm/Injury” [LIV Schaden nehmen]

Complex (Zero-grade root):

Vorderglied accent: *áriṣṭi*

Suffix accent: *ariṣṭátāti* [-tāti-]

***sed-** EWA 2:692-3; LIV 513-5 “Sitting still” [LIV sich setzen]

Complex (E/O-grade root):

Vorderglied accent: *níṣatti*

1.*seh₁(i)- EWA 2:186; LIV 518 “Anstürmen, Dahinschießen, Schußbahn” [LIV loslassen]

Complex (Zero-grade root):

Vorderglied accent: *prásiti*

***seik^u-** EWA 2:744-5; LIV 523 “Pouring” [LIV ausgießen]

Simplex (Zero-grade root):

Unspecified accent: *sikti*

***selg'-** EWA 2:709; LIV 528-9 “Creation” [LIV loslassen, entsenden]

Complex (Zero-grade root):

Vorderglied accent: *vísṛṣṭi*

***solH₂uo-** EWA 2:711 “Wholeness/totality”

Simplex (O-grade ? -assumed because of cognates in other IE languages):

Suffix accent: *sarvátāti* [-tāti-]

***senh₂- ?** EWA 2:696-7; LIV 532-3 “Attainment/winning” [LIV erlangen, erwischen]

Simplex (Zero-grade root):

Suffix accent: *sā́ti*

(E/O-grade root):

Root accent: *sá́niti*

Complex (E/O-grade root):

Root accent: *puruṣá́nti, dvasá́nti*

(Zero-grade root):

Vorderglied accent : *nṛ'sā́ti, gósā́ti, sv'arṣā́ti, tokásā́ti, arkásā́ti, vā'jasā́ti, árṇasā́ti, medhásā́ti, dhā́nasā́ti, dyumnásā́ti, śū'rasā́ti, kṣétrasā́ti*

***sep-** EWA 2:700-1; LIV 534 [LIV (richtig) behandeln, (in Ehre) halten]

This group of words refers to horses. Perhaps the literal meaning is the “honoured/treasured ones”.

Simplex (E/O-grade root):

Root accent: *sá́pti, sáptīvat* [*-ti-H-ǵent-]

Complex (E/O-grade root):

Vorderglied accent : *yuyujā́nasapti*

***se(N)(t)- ?** EWA 2:690 “Name of a plant -a kind of Chickpea” - most probably a loanword.

We do not have an etymology for this word. We know PIE verbal roots must end in a consonant, so, if the is an inherited PIE word, the [t] might be part of the root (which would make this an i-stem, not a ti-stem). We also cannot rule out a zero-grade form of a root in ***sem(t)** or ***sen(t)**.

Complex(?) (E/O/Zero-grade accent):

satī́nāmanyu

***seu-** EWA 2:713-4; LIV 537-8 “Pressing” [LIV auspressen]

Complex (Zero-grade root):

Vorderglied accent : *sómasuti, ghṛtá́āsuti, bhûryā́suti, sarpírā́suti,*

Suffix accent : *āsutí, pr̥tsutí*

***seuH-** EWA 2:714-5; LIV 538 “Birth/Genesis” [LIV gebären]

Reduplicated simplex, or complex (Zero-grade root):

Vorderglied accent : *súṣuti*

***seuh₁-** EWA 2:715-6; LIV 538-9 “Pressure/Drive” [LIV antreiben, in Bewegung halten]

Complex (Zero-grade root):

Vorderglied accent: *pářiṣūti*

***sneig^{uh}-** EWA 2:772; LIV 573 “Blizzard” [LIV kleben bleiben]

Simplex (Zero-grade root):

Root accent: *snîhiti* [***-i-ti-**?]

(E/O-grade root):

Root accent: *snéhiit* [***-i-ti-**?]

***sp^heh₁-** EWA 2:776-7; LIV 584 “Fat” [LIV wunschgemäß geraten, gelingen]

The Vedic verb is translated by Mayrhofer (EWA) as “fett werden, feist werden, zunehmen”. The semantics are problematic. Perhaps a successful person has more than enough food, and is more likely to become fat.

Simplex (E/O-grade root):

Suffix accent: *sphā́ti*

***sRek^(u)-** ? EWA 2:783 “Point, edge” [EWA Zacke, Ecke]

This word is cognate with Avestan *sraxtay* “Zacke, Ecke” and the Vedic o-stem *srká-* “Spitze (?)”. Considering Indo-Iranian has undergone mergers of ***r** and ***l**, and ***k^u** and ***k**, we cannot reconstruct this root more than ***sRek^(u)-** unless we find some strong evidence from outside of Indo-Iranian.

Simplex (E/O-grade root):

Suffix accent: *sraktí*

Complex (E/O-grade root):

Vorderglied accent: *návasrakti*

***sreṇ-** EWA 2:784-5; LIV 588 “Path/road/course (of river)” [LIV fließen, strömen]

Simplex (Zero-grade root):

Suffix accent: *srutí*

(E/O-grade root):

Suffix accent: *srotyâ* [***-tje-h₂**] ‘river/stream’

***sued^hiti- / *suedh₂-** ? EWA 2:790 “Axe, hatchet”

Simplex (E-grade root):

svádhitīvat (*-tiH-**u**ent- ?)

*ste**u**- EWA 2:757-8; LIV 600-1 “Song of praise/prayer” [*LIV* bekannt sein; preisen]

Simplex (Zero-grade root):

Suffix accent: *stutí*

Complex (Zero-grade root):

Vorderglied accent: *páriṣṭuti, ánuṣṭuti, úpastuti, pūrvyástuti, prástuti, prātiṣṭuti*

Suffix accent: *duṣṭutí, suṣṭutí*

*ten- EWA 1:618-9; LIV 626-7 “Rope/cord” [*LIV* sich spannen, sich dehnen]

Simplex (E/O-grade root):

Root accent: *tánti*

Suffix accent: *tatanúṣṭi* [built on a perfect participle –Note reduplication and *-**u**es-/-**us**-suffix]

*ter**h**₂- EWA 1:629-32; LIV 633-4 “Conquest, overcoming” [*LIV* durchkommen, überqueren]

Complex (Zero-grade root):

Vorderglied accent: *prátūrti, suprátūrti*

*ter**p**- (1) EWA 1:634-5; LIV 636 “Enjoyment/satiety/satisfaction” [*LIV* sich sättigen]

Simplex (Zero-grade root):

Root accent: *tr̥’pti*

*tk’**e**_i- EWA 1:431-2; LIV 643-4 “Dwelling > people” [*LIV* Landbau treiben, siedeln, wohnen]

Simplex (Zero-grade root):

Suffix accent: *kṣití*

Complex (Zero-grade root):

Vorderglied accent: *dhārayátkṣiti*

Suffix accent: *urukṣití, sukṣití*

***u**ei**h**₁- EWA 2:509-10; LIV 668-9 [*LIV* sein Augenmerk richten auf, trachten nach]

Vīti in compounds has the original meaning of “to strive for/after”. As a simplex, however, the semantics have clearly developed. Perhaps the gods strive for this sacrifice.

Simplex (Zero-grade root):

Suffix accent: *vī́tí* “Sacrificial Meal”

Complex (Zero-grade root):

Vorderglied accent: *devá́vīti, ráthavī́ti, ghôrivī́ti*

Suffix accent: *vī́tíhotra*

3.?ueis* -** EWA 2:585-6; LIV 672 “Toil /work” [LIV ausführen, zustande bringen]

Simplex (Zero-grade root):

Suffix accent: *viṣ́tí*

Complex (Zero-grade root):

Unspecified accent: *triviṣ́tidhātu*

Vorderglied accent: *párivīṣ́ti*

Suffix accent: *triviṣ́tí*

****uek*'-** EWA 2:527-8; LIV 672-3 “Eager/willing” [LIV wünschen]

Simplex (E/O-grade root):

Root accent: *váṣ́ti*

****uek*''-** EWA 2:489-91; LIV 673-4 “Expression/uttering” [LIV sagen]

Complex (Zero-grade root):

Vorderglied accent: *námokti, áchokti*

Root accent: *satyókti*

****u!k*''-** EWA 2:570-1 “Wolfishness (personified); Wolf > Robber”

Simplex (Zero-grade root):

Suffix accent: *vrkáti* [****-e-ti-***]

Without Etymology

vyáti EWA 2:590 [EWA Pair (of horses)] Zero/E-grade ?; Complex (?)

Adverbial Items

****ap* **apo*** EWA 1:82; LIPP 2:66-86 “Away” [LIPP weg, fort, ab; zurück, wieder; hinter, nach]

Simplex

Root accent: *ápatya* [****-tjo-***] ‘descendent’

Complex

Suffix accent: *anapatyá* [*-t̥io-]

Hinterglied accent: *apatyasâc* [*-t̥io-]

***ato, *ati** LIPP 2:93-6 “Away/back” [LIPP zurück, wieder; weg, fort]

Simplex

Unspecified accent: *atya* [*-t̥io]

Root accent: *āti*

Complex

Hinterglied accent: *atithigvá, ātithigvá, atiyājá, atipārayá, duratyétu*

Suffix accent: *atithín*

Vorderglied accent: *ánatidbhuta*

Root accent: *átyavi*

***k^he-ti** EWA 1:294; LIPP 2:452-79 “How many?” [LIPP wer?; irgendwer?]

Simplex (E-grade root):

Root accent: *kāti*

Suffix accent: *katithá*

***ní-t̥io** EWA 2:43; LIPP 2:221-36 [LIPP in, drinnen; hinein]

Simplex (Zero-grade root):

Root accent: *nítya*

***pro-ti** EWA 2:176-7; LIPP 2:655-60 “Towards, against” [LIV hin; entgegen, gegenüber, zurück]

Simplex (E-grade root):

Root accent: *prāti*

Complex (E-grade root):

Hinterglied accent: *pratiṣṭhā, prativī, prativarā, supratīcāksa, praticāksa, pratimāna, apratimānā, prati-icīna, prati-icīnā, pratiṣṭhā, pratimā, pratiṣṭhī, pratidhī, pratidīvan, pratikāmām, pratidoṣām*

Vorderglied accent: *ghṛtāpratīka, tveṣāpratīka, śūcīpratīka, mādhipratīka, cārupratīka, sūpratīka, āprati-ita, āpratiṣkuta, āpratidhr̥ṣṭasavas*

Root accent: *prātīka, prātīpa, prātīrūpa, prātīveśa, prātījanya, prātīcyavīyas*

Suffix accent : *apratí, tuvipratí, pratyác, pratîtya, Platí* [name of a man –probably shortened form of compound. N.B. *l* variant. See EWA 2:194]

***sṇh₂u-tjo** EWA 2:697; LIPP 2:710-6 “Distant” [*LIPP* entfernt, getrennt, abseits; ohne]

(Zero-grade root):

Root accent: *sánutya*

Numerals

***dṽi-tjo** LIPP 2:168-74 “Two”

(Zero-grade root):

Suffix accent: *dviṭya*

***h₁neṽn-** EWA 2:24 “Ninety”

(E-grade root):

Suffix accent: *navatí*

***h₃ek'-(t)h₃-** EWA 1:137 “Eighty”

Suffix accent: *aśṭí*

***penk^u-** EWA 2:63-4 “A group of five”

(E/O-grade):

Suffix accent: *pañktí*

***septṃ** EWA 2:700 “Seventy”

(E/O-grade):

Suffix accent: *saptatí*

***sṽek's-** EWA 2:682 “Sixty”

(E/O-grade):

Suffix accent: *saṣṭí*

***tr-tjo** LIPP 2:803-5 “Three”

(Zero-grade root):

Suffix accent: *trṭya*

ANATOLIAN

ANATOLIAN INTRODUCTION

In order to gather my Anatolian data I have used a number of strategies. I originally began by analysing texts, but this seemed to be a slow way of doing things –particularly when I wanted to find every possible example of a ti-stem. In the end I settled with pulling my data from Johannes Friedrich’s *Kurzgefaßtes Hethitisches Wörterbuch* (1991, originally published between 1952 and 1966 –henceforth KHW). For the most part this has been satisfactory, although in some cases words have been reinterpreted by later scholars. One common example of Friedrich’s occasional misanalysis is interpreting a word ending in *–it* as a t-stem rather than as an instrumental case form of some other stem. My data are not entirely based on that of Friedrich, however. I have on occasion taken data from the three major etymological dictionaries: Johann Tischler’s *Hetitisches Etymologisches Glossar* (1983 –henceforth HEG); Jaan Puhvel’s *Hittite Etymological Dictionary* (9 volumes so far. 1984-. Henceforth HED); Alwin Kloekhorst’s *Etymological Dictionary of the Hittite Inherited Lexicon* (2008 –henceforth HIL) in the *Leiden Indo-European Etymological Dictionary Series*. I have also occasionally referred to the still incomplete *The Hittite Dictionary of the Oriental Institute of the University of Chicago* (1989-. –Henceforth the *Chicago Hittite Dictionary*), and Jin Jie’s *A Complete Retrograde Glossary of the Hittite Language* (1994). David Michael Weeks’ 1985 UCLA PhD dissertation titled *Hittite Vocabulary: An Anatolian Appendix to Buck’s Dictionary of Selected Synonyms in the Principal Indo-European Languages* was also quite a bit of help on occasion. Calvert Watkins’ *The American Heritage Dictionary of Indo-European Roots* (3ed. 2011) has been referred to on a couple of occasions. In other cases I rely on etymological dictionaries for data from the non-Anatolian languages. These texts are referred to in the separate languages sections. There are three more texts that were helpful for obtaining data, as well as helping with the analysis: H. Craig Melchert’s *Anatolian Historical Phonology* (1994 –henceforth AHP), Sara E. Kimball’s *Hittite Historical Phonology* (1999), and Elisabeth Rieken’s *Untersuchungen zur nominalen Stammbildung des Hethitischen* (1999) in the *Studien zu den Bogazköy-Texten* series. From that same series, we can also add Frank Starke’s *Untersuchung zur Stammbildung des keilschrift-luwischen Nomens* (1990). I

have frequently referred to *A Grammar of the Hittite Language (Part 1: Reference Grammar)* by Harry A. Hoffner Jr. and H. Craig Melchert (2008). Very occasionally I will refer the reader to a journal article, but on the whole I leave the reader to follow the references I have provided for a much fuller discussion.

In terms of my methodology, I have included most words I thought might *possibly* be ti-stems. Some items are much less likely than others. I was looking for certain phonological features when picking which words to include. These usually included [z], especially [zi], and [sti]. There are many examples of [ti] included as well, although they usually represent PIE ***d**^(h)**i** –mind you, this does not always appear to be the case in the Anatolian languages other than Hittite. As above, you will see that I represent the Anatolian languages orthographically with square brackets. When I represent the reconstructed phonetics of these languages I put the words between dashes (e.g. /.../) as is typical with IPA. Often I will provide PIE reconstructions, but not a Proto-Anatolian (PA), unless I think the PA reconstruction is significant for my argument. If I provide an asterisk (*) without PIE or PA beforehand, assume that it is PIE unless I say otherwise.

ANATOLIAN DATA

^{EN} ^É *abuzzi-* HED 1:102-2 “Storemaster” *Hittite*

^É *abuzzi* by itself means “storehouse, storeroom”. But by adding the Sumerogram ^É ‘house, household, temple, plot of land’. Sumerogram ^{EN} ‘dignitary; lord; high priest’ to indicate we are talking about the ‘master of the house’. This word is believed to be Hurrian in origin, or from Akkadian *abūsu* ‘storehouse’. For this reason we can rule it out as an Indo-European ti-stem.

^{GIŠ} *alanza-* HED 1:29-30 “Alder ?” *Hittite*

This is some type of tree and its wood. It is possibly etymologically related to Latin *alnus* “alder” and Lithuanian *alksnis* “alder” as well as *álksna* “alder thicket”. Germanic has many

attestations of this root, for example *alor/aler* in Old English (see EDPG 22 for more examples). These etymologies point to a root ***h₂el-(i)s-no-**. There are some problems with connecting the Hittite word to these words: Hittite should have an [h] at the beginning of a word, reflecting laryngeals ***h₂** and ***h₃**; Hittite would have to have undergone metathesis of the ***s** and the ***n**. It is assumed in Baltic that a ***k** was inserted between the ***l** and the ***s**. The Hittite form would most likely reflect ***h₂el-*ṇ*-so-**. Such a solution rules it out as a ti-stem.

^(UH7) *alwanza-* HIL 171; HED 1:43-7 “Subject to witchcraft, affected by sorcery” *Hittite*

alwanzatar- “witchcraft, magic”

alwanzena- “practising witchcraft”

alwanzessar- “witchcraft”

When ***s** follows a resonant (***r**, ***n**), we expect to find a [z]. We also find [z(a)] when we have the combination of ***nts**. Therefore, we can probably surmise that we have the historical shape of PAn ***alwan(t)s-** which comes by metathesis from ***al-us-no-**. Puhvel (HED) suggests it could be related to Greek ἀλύω “to be deeply stirred/excited”, which is a denominal verb from the u-stem ἄλυσ “agitation”. Hjalmar Frisk in GEW 80-1 connects the verb to other verbal forms such as ἀλέομαι “to avoid, shun”. LIV reconstructs this verb as ***h₂leu-** (LIV 278 fernhalten). If these are connected we have the problem of explaining why we do not have an initial [h] in the Hittite. As we have in the above entry, Hittite would also show metathesis of the ***sn** cluster. Kloekhorst in HIL believes this form to be Non-Indo-European. In any case, it is highly unlikely that the form reflects a ti-stem.

^{NINDA} *ampanzi-* Luwian? “A kind of bread” *Hittite*

The Sumerogram ^{NINDA} suggests we are talking about some item of food –probably bread. Friedrich assumes a Luwian origin. It is likely that the ending *-anzi-* reflects the sequence ***-n(t)s-i-**.

andurziya “inside”

This is a compound of two roots, ***én** + **d^hur-ti**, with the basic meaning of “in the door” > “inside”. It would be reasonable to assume that since these two forms are adverbs, they reflect the ***ti** adverb suffix. The second form perhaps reflects more properly the adverb suffix ***tjo**.

annanuzziyant- ‘having a leather halter or curb’

The Sumerogram ^{KUŠ} “skin, hide, leather” combined with a Hittite *-uzzi* instrumental suffix, suggests that this word is some sort of tool made from leather –hence “halter” or “curb”. It appears to be related to the Hittite verb *annanu-^{zi}* “to train, to educate”. The entire meaning could therefore be “a leather tool for training”. Kloekhorst (HIL) reconstructs the verb as ***h₃en-** (with a deverbal causative ***-nu-** suffix). Again we would have the problem of another root with an initial ***h₂/*h₃** laryngeal not showing an initial [h] in Hittite. The only IE cognate I am aware of could possibly be Tocharian AB *en-* ‘to instruct’.

This is an adverb in ***ti** from the adjective *anna-* ‘former, old’. Melchert (1994, p.74) reconstructs the word as PA ***én-o-ti** with subsequent gemination of the ***n** following an accented ***é** under Čop’s Law. Because this word is first attested in NH, replacing the earlier *karū* of the same meaning, it has been assumed that it is probably a loanword, although this is far from certain. Puhvel (HED) reconstructs the root of this word as Indo-European in origin with the form ***onjo-**.

This form is reconstructed fairly reliably as ***apo-tjo-** from a well attested PIE root ***áp, *ápo** [*LIPP* weg, fort, ab; zurück, wieder; hinter, nach]. Note the lack of initial [h] in Hittite. This is

unexpected while dealing with a confidently reconstructed late PIE ***a** which usually reflects ***h₂e**. Dunkel in *LIPP* makes the suggestion of a fourth laryngeal ***h₄**. Related Hittite forms show a distinction between the initial vowel. *āppa* ‘behind’, for example, always has the initial plene spelling *a-ap-pa*, whereas *appizzi(ya)-* always lacks the initial plene spelling (*ap-pé-ez-zi-*). We could expect this difference in length with the operation of Čop’s Law where accented vowels are lengthened. It is understood that the /p/ in *āppa*, must be analogical because we would expect a /b/ following a PA long vowel. *appizzi(ya)-* provides a candidate for preserving or reinstating the /p/. Kümmel’s idea of a Pre-PIE ***ā** becoming PIE ***ó** when stressed and ***e** when not, is worth considering here. We could explain the long [ā] in *āppa* as reflecting an initial stressed ***ā**, and the short [a] in *appizzi(ya)-* could reflect non-initial stress. This alternation in stress could easily be reflected in PIE ***op-** and ***ep-** (cf. Greek ὀπίσθεν ‘behind, after’, and ἐπί ‘on, upon’). The difficulty, however, is that the form ***ap-** is usually considered to be connected as well (Latin *ab* ‘from’, Greek ἀπό ‘away’). Kümmel’s theory does not satisfactorily explain the possible existence of an ***o~*e~*a** ablaut pattern.

^{UZU} *appuzzi-* HIL 195; HED 1:103-4; LIV 237 “Animal fat, tallow” *Hittite*

^{UZU} *appuzziyant-* “having animal fat, tallow”

The root may be connected to the Hittite verb *ēpzi* / *appanzi* “to seize, grasp, capture” from PIE ***h₁ep-** [*LIV* fassen, ergreifen]. The word appears to contain an instrumental *-uzzi-* suffix and has the Sumerogram ^{UZU} “flesh/meat”. If the etymology is correct then we would have a meaning “some part of flesh with which you capture, seize something.” This seems a little odd to me semantically, unless the intention is to use it as bait.

arahza HIL 245-7; HED 1:129-35; LIPP 2:665 (1) *adv.* “around, on (or: to, from) the outside, away, absent, abroad.” (2) *adj.* “alien.” *Hittite*

arahza(n)da ***-ti-an-do** “(all)around”

arahzena- ***-ti-en-o-** “bordering, adjoining, surrounding”

arahzenant- ***-ti-en-ant-** “bordering, adjoining, surrounding”

arahziya- ***tjo-** “alien”

This word and its related forms appear to be Indo-European. Dunkel (LIPP) reconstructs the root as a compound of ***rh₁** and **1.or 2.h₂o/i-**. ***rh₁** can be seen in the Latin *re-* “back, again” prefix. Presumably this started as an adverb in ***-ti** before being derived as a noun or adjective.

^{GIŠ/NA4} *armizzi-* HED 1:160-2 “Bridge” *Hittite*

armizziya- “ibid.”

This word sometimes has the Sumerograms ^{GIŠ} “wood, tree” and ^{NA4} “stone”, which suggests that whatever it is, it was made of wood or stone. It is fairly certain by context at any rate that the word means “bridge”. The etymological debate is complex. Some scholars have connected it to the the Hittite *arma-* “moon” based on the idea (as far as I know, unproven) of an Anatolian crescent shaped bridge. Other scholars have connected the word to the Greek ὄρμος “chord, chain, roadstead, anchorage”. I think this is highly unlikely because the Greek seems to be related to the verb εἶρω “to fasten together in rows” which comes from **2.*ser-** [LIV 534-5 aneinander reißen, verknüpfen], and we would have to explain the loss of the ***s**. Others have connected to the Greek ἔρμα(τα) “prop (for ships onshore), support, reef, bank, cairn, barrow, ballast, that which keeps a ship steady, ear-rings, snake’s coils”. The rough breathing could suggest an original initial ***s**, but that is not certain. Semantically this is more attractive.

awiti- HED 1:246-7 *Hittite*

This word has been reconstructed as ***h₂ou-i-h₁ed-i-**. It describes a leonine animal (perhaps a winged lion/sphinx), and this etymology would mean something along the lines of “sheep-eater”. We find a problem that the reconstructed ***h₂** is not retained here. At any rate, this is unlikely to reflect a ti-stem as the ***t** would have regularly developed to ***z** before an ***i**.

Puhvel (HED) prefers to connect this to the root ***uēid-** “to see”. Greek uses this root in ἄδηλος “making unseen, annihilating, destructive” with the negative prefix (***n-**). So too does Latin with *invīsus* “unseen” with the same prefix. I think this is a stretch semantically, and phonologically I would not expect a syllabic ***n** to become [a] in Hittite, even if Hittite did use this negative particle as the later PIE languages do.

^{UZU} *dānḫasti-*

HIL 325-6; HED 3:233-7 “Double boned meat”

Hittite

This root appears to contain the root ***h₂ost-h₂-** “bone” which we seen in Greek ὀστέον and Latin *os* “bone”. We find the expected [h] for ***h₂**, so this is fairly uncontroversial. Kloekhorst (HIL) prefers to reconstruct the root with ***h₃**. There's not a lot of evidence either way that suggests one laryngeal is better reconstructed here than the other. ***h₃** would colour a ***e** to [o] in Greek, but if the vowel was already ***o**, there would be no colouring. Anatolian supports either interpretation. I have chosen ***h₂** because it appears most often in the literature. *dān-* is connected to the adverb *tān* “for the second time, again, subordinately” which Kloekhorst (HIL) reconstructs with ***duoióm**. The ^{UZU} Sumerogram suggests “food” or “flesh”. Although this looks a lot like a ti-stem ***t** is kept as a [t] before an ***i** only after ***s** –it is usually assumed to be a regular i-stem. Sanskrit *ásti* ‘bone’, for example, regularly reflects ***h₂ost-h₂** and most evidence favours the idea that the ***t** is part of the root, not the stem.

dalugašti-

HIL 819-21 “Length”

Hittite

This root has some issues concerning its reconstruction. There seem to be a number of IE cognates –or at least forms with very similar semantics and phonetics: Sanskrit *dīrghá-*; Avestan *darəga-*; Old Church Slavonic *dlgb*; Lithuanian *ilgas*; Greek *δολιχός*; Gothic *laggs* (/laŋs/); Latin *longus*. Kloekhorst (HIL) reconstructs the root as ***dólug^h-** for the Hittite, but we get into a number of problems here if we connect it with the IE data. Sanskrit and Avestan seem to reflect a syllabic resonant plus a laryngeal (i.e. a long syllabic resonant) ***dlh₁g^h-o-** (Greek *ἐνδελείχεια* “continuity, persistency” suggests that the laryngeal is ***h₁**). *δολιχός* could reflect ***dolh₁-i-g^h-o-**, whereas the Germanic and Latin forms probably reflect ***dlh₁-on-g^h-o-**.

On top of this, the Hittite form does not seem to reflect a laryngeal, as we would expect ***VRh₁V** to become **VRRV**. There is no particularly satisfying solution here. Kloekhorst (HIL) assumes there is a “petrified pair” here (cf. English *high and dry, safe and sound*). In any case, the Hittite form appears to carry the suffix *–ašti-* which may well reflect PIE ***-osti-**. There are a few other words with the suffix, such as *palhašti-* “width, breadth, expanse” and the Luwian *lu(m)pašti-* “pain, grievance, chagrin”. *–ašti-* may be responsible for deriving abstract nouns from adjectives. If this is the case, then this is probably the only time in Anatolian where we have a possible ***-ti-** suffix filling a similar function to the typical ***-ti-** suffix in the later IE languages.

gagaštiya-

HED 4:17 “Grasshopper like animal? A hare?”

Hittite

Used in a simile to describe how the Storm God jumped into his chariot. Reduplication is common in animal names. Although Puhvel does not state it, this root resembles Hittite *kast-* “hunger” from ***g^(r)osd-** (HIL 461-3), which in turn resembles **?1.*g^(u)es-** [LIV 198-9 essen, fressen, verzehren]. The base-meaning would perhaps be “the hungry one”. If ***g^(u)es-** is behind this word, we could assume that it was a *-iya-* adjective built on a t-stem. The idea that the word may be cognate with English *hare*, Latin *cānus* (< Plt ***kasno-**), and Sanskrit *śaśá-* is also attractive (see EDL 88-9). This would appear to come from a root ***k'eh₁-** “grey”. A number of IE forms seem to point towards an early s-stem attached to this root, which could be the origin of the Hittite [s]. If we were to accept this etymology, a ti-stem interpretation would be possible as the ***t** would be preserved after ***s**. Perhaps this another example of ***-osti-**.

^(UTÚL) *ganga(n)ti-*

HED 4:51-4 “Garden produce, garden greens, vegetables”

Hittite

^{SAL} *gangatitalla-* “Server of vegetable dish” -with Luwian denominative agent noun suffix – *talla-*

This word with the Sumerogram ^{UTÚL} signifies some sort of “mash”. Puhvel (*HED*) suggests that this is Hurrian in origin.

^{DUG} *gazzi-*

HED 4:141-2 “Jar”

Hittite

^{GIŠ} *gazziduri-* “wooden (^{GIŠ}) water holder (i.e. bath)”

^{KUŠ} *gazziga-* “a pipe or tube made of skin/leather (^{KUŠ})”

Believed to have been from Hurrian into Akkadian, and in turn borrowed from Akkadian (*kāsu-* “cup”) into Hittite. This word has the Sumerogram ^{DUG} ‘container/vessel’,

^(UZU) *genzu-*

HIL 468-9; NIL 139-53 “Genitals/abdomen/lap” > “mercy” *Hittite*

gimzu- “ibid.” (just a variant form)

genzuwala- “merciful” (with an *-ala-* suffix)

This word is understood to come from the PIE ***g'enh₁-** (*LIV* 163-5 *erzeugen*). The [z] is a regular outcome of an ***s** following a nasal. The Sumerogram ^{UZU} suggests we are talking about flesh, or a body part. It is understood that the metaphorical meaning of “mercy” developed from the body part. This is presumably a u-stem built on an s-stem, so we can rule it out as a ti-stem.

gulzi-

HED 4:239-44; HIL 492-3 “Engraving”

Hittite

gulzat(t)ar /-at(ta)n- “wooden tablet, sketch, draft”

Puhvel (HED) prefers the idea that this is a zero-grade of the PIE root ***g^helH-** (*LIV* 207 *quälen, stechen*), although it is important to note that he does not reconstruct the laryngeal which *LIV* rightly puts there because of the acute accent shown in its Lithuanian data. Kloekhorst, however, prefers to reconstruct this as a zero-grade of ***k^hels-** (*LIV* 388-9 *Furchen ziehen, einfurchen*). The first form is a regular i-stem, and the second appears to have a heteroclitic r/n-stem *-ātar/-attan-* suffix, which is used to derive neuter abstract/agent nouns. It is generally assumed that this is Luwian because of the change from ***ls** > [lz].

gurzip(p)ant-

HED 4:287-8; HEG 668 “Wearing a hauberk”

Hittite

This appears to be borrowed from the Akkadian *gursip(p)u* “gorget, hauberk, byrnie, mailcoat”.

ḥaḥḥašitti-

HED 3:8 “Herb or plant”

Hittite

To my knowledge, this word has no etymology. Puhvel (HED) claims that it may be a compound botanical name (*ḥaḥḥa- sitti-*). *ḥaḥḥal-* “yellow/green” could share a common origin. You also get the word *šittar* “spear”. The overall meaning, if these are related, would be “(plant with) green/yellow spear(s)”. Semantically this sounds fine. Kloekhorst (HIL 761-2) tentatively reconstructs *šittar* as ***h₁s-je-tr-** from the root **2.*h₁es-** (*LIV* 242-3 *werfen, schießen*). In this case, the replacement of the ***-ter-** agentive/instrumental suffix would have to be explained. It is unlikely the [tti] here represents ***-ti-**, as we would expect assibilation of the ***t** to [z]. *šittar-* also occurs in Luwian, so it is assumed that it has been loaned into Hittite from there. Nevertheless, there are many examples of Luwian t-stems with i-stem extensions in Hittite (these occur without assibilation). This reconstruction would depend on the existence of an unattested Luwian form *šitt-*.

ḥalenzu-

HED 3:19-20 “Duckweed, algae”

Hittite

When [z] appears after an [n] it is usually reasonable to assume that it reflects ***s**, rather than ***ti**. Puhvel (HED) suggests that this could be connected to the verb *ḥalai-/ ḥali-* “to set in motion, thrust” from ***h₂el-**. There is a verb ***h₂el-** in *LIV* (p.262), but it has the meaning of “to rear/raise/nurture” and does not seem to have any Anatolian cognates. U-stem loanwords in Hittite are fairly rare, although it has been suggested that this word possesses the Hattic locative plural *ha-* and *le-* prefixes (See HED 3:19-20). This is unlikely to be a ti-stem at any rate.

ḥalwat-

HED 3:49-51 “Vengeful, quarrelsome”

Hittite

This word is likely to come from ***h₃elh₁-** (*LIV* 298 *zugrunde gehen*) and contains the common gender action/result noun forming suffix *-att-*, and is believed to be Luwian in

origin. Believed to be cognate with the verb *hallana-/hallani-* “to trample down/flatten (fields and plants)” (HIL 271-2) and the verb *halluwāi-* “resort to violence, brawl, quarrel” (HED) (denominative of the noun *halluwāi-*?). Melchert (1994 p.82) argues that this could not be derived from a PIE n-infix verb because there is little or no evidence for such a verb type, but prefers the reconstruction of a **-nu-* suffix (**h₃elh₁-nu-*) which is used to make causatives from other verbs, and factitives from adjectives. LIV, in contrast, reconstructs this as an n-infix (**h₃el-n(e)-h₁-*). Greek ὀλλῶμι ‘to destroy’ reflects a weird combination of a nu-stem verb and an n-infix verb. If it was purely an n-infix verb we would expect *ὀλλημι, and if it was purely a nu-stem we would probably expect *ὀλενωμι. It is possible that this was an n-infix verb with a later reinterpretation as a nu-stem. The Luwian Hittite *halwat-* is still difficult to explain under all of these interpretations. Perhaps it reflects a zero-grade **-nu-* suffix (**h₃elh₁-nu-ot-*) with simplification of the **lh₁nu* cluster. In any case we can rule this out as a ti-stem.

^{LÚ} *hantantiyali-* HIL 289-91; HED 3:106 “Repairman (?)”

Hittite

hantati- “trust, determination” -Luwian origin

This appears to be a agent noun (confirmed by use of Sumerogram ^{LÚ} “man”) in *-ala-* built on the verb *hantantai-* (with *parā* this verb means “to act providential, show providence, provide for”. *hantantai-* in turn is a denominal verb from *hantant-* (unattested as far as I am aware) which, if it existed, must have had a meaning similar to “providential action”. It could be that *hantant-* is a participle of *hantai-* ‘to (en)trust, betroth, marry off; match, fix, set right, fit, determine, diagnose, assure, arrange, ready’, etc., although *-ant-* suffixes in Hittite seem to have additional functions: a possessive denominal adjective function, and a delimiting or individualizing function. The *-āi-* verbal stem makes denominal verbs from base nouns, so it is more likely that *hantant-* is a noun rather than an adjective. If *hantant-* has the meaning “provision”, *hantantai-* would have the meaning to “give provisions”, and *hantantiyali-* would mean “one who gives provisions”. A number of scholars have attempted to provide an

etymology for this word and –although Kloekhorst strongly disagrees that this is a good etymology – *ḥa-/ḥ^{zi}* “to believe, to trust” (see HIL 267) is by far the best option. Morphologically this would be odd as we would have a double nt-stem ***h₂eH-nt-ont-**. It probably should not be ruled out, however. At any case, this is most certainly an nt-stem, and the *–iya-* sequence is a result of the *–āi-* verbal suffix before an *–ala-* nominal agent suffix. The form *ḥantati-* probably corresponds to an *–att-* action/result noun suffix attached to the verb *ḥantai-*. As mentioned earlier, Luwian often has a [ti] where Hittite usually has [t]. The question regarding this phenomenon is whether Hittite lost the ***i**, or Luwian added it.

<i>hanz(a)</i>	HED 3:92-6, 108-12; HIL 287-9; LIPP 2:306-11	adv. “In front”	<i>Hittite</i>
<i>hanti</i>	adv. “separately”		Hittite
<i>ḥanti-</i>	“headband”		Cuneiform Luwian (*-o- suffix)
<i>hantezzi(ya)-</i>	“first/foremost”		Hittite (*-tjo- suffix)
<i>hantezzili</i>	adv. “formerly”		Hittite (*-tjo- suffix)
<i>ḥantili-</i>	“first”		Cuneiform Luwian (*-lo- suffix)
<i>ḥantiyara-</i>	“more to the front (?)”		Cuneiform Luwian (*-ero- suffix)
<i>ḥantiyašša-</i>	“more to the front (?)”		Cuneiform Luwian
<i>hanti.tiyatalla-</i>	“to bring before court, to show” (second element from *steh₂- “to stand”). Has the common gender agent noun suffix <i>–(a)t(t)alla-</i> . NB. this may come from <i>*hanati tiya</i> (cf. <i>hanna-</i> “judge”, and <i>hanta-</i> “legal proceedings”, see HED 3:96)		

These words are all understood to be connected to the Hittite *ḥant-* “forehead”. The usual reconstruction is ***h₂ent-**. We can compare this to Greek ἀντί “over, against”, Sanskrit *ánti* “opposite, facing”, and Latin *ante* “before, in front”. Hieroglyphic Luwian attests FRONS-*ti-i* and PRAE-*ti*, which are obviously related. For *hanz(a)* Dunkel (LIPP) reconstructs ***h₂ént-i**,

for *hanti* he reconstructs ***h₂nt-éj**, and for *hantezzi(ya)*- he reconstructs ***h₂nt-éj-tjo-**. Except perhaps for the forms with the ***-tjo-** suffix, we are almost certainly not dealing with a ti-stem.

^{GIŠ} *hanzana-*

HED 3:112; HIL 292-3

Hittite

hanzana- “strand/thread/yarn/wool” or “black”

There have been attempts to etymologize these words as colour words. Puhvel (HED) dislikes this interpretation because of this passage: SÍG SA₅ SÍG ZA.GÌN SÍG *ha-an-za-na-aš* SÍG SIG₇.SIG₇ SÍG BABBAR *da-an-zi* (*KUB* 29.4 i (31)). The Sumerogram SÍG means “wool”; SA₅ means “red”; ZA.GÌN means “bluestone, lapis lazuli, blue”; SIG₇ means “yellow, green”; BABBAR “white” and Hittite *da-an-zi* “they take”. Literally this sentence would be, “wool red, wool blue, wool *h*.(?), wool yellow, wool white, they take.” In this context it is fairly clear that *hanzana-* is a colour. Kloekhorst (HIL) supports the interpretation of “black”, although acknowledges that it can be used to refer to a spider’s web (*a-u-ṣa-ṣa-aš ha-an-za-na-aš*), and a wooden tool (^{GIŠ}*hanzana-*) of some sort. This leads Kloekhorst to assume there are actually three homonymns with quite different meanings. At any rate [z] is common in Hittite following an [n] and often reflects ***n(t)s**, so for this reason it is unlikely we have a ti-stem. Melchert (1994, p.121) reconstructs the word for the colour as ***Hms(o)no-**, and Kloekhorst as ***h₂ns-(o)no-** while assuming it is cognate with Greek ἄσις “slime, mud”, and Sanskrit *ásita-* “dark, black”.

^{UTÚL} *hapalzeel-*

HED 3:118 “Pot-dish, stew, soup”

Hittite

^{UTÚL} *hapalzir-* “pot-dish, stew, soup”

Not a lot is known about these words. Considering that they do not really differ except for the final consonant, Puhvel views this difference as dissimilatory in nature (perhaps the second [l] is dissimilated because of the first. We find the Sumerogram ^{UTÚL} “mash, pot-dish” which suggests we are talking about some kind of culinary item. In Hittite it is fairly common to find

a [z] after a resonant, although the change of *s after *l to [z] is usually considered a Luwian peculiarity. There is a suffix *-zil-* which is used to create result nouns from verbs (e.g. *tayazzil-* “theft” from *tāya-^{zi}* “steal”), although this does not seem to be such a suffix because there is not an obvious verb from which it is derived, and because of the consonantal alternation of [l/r]. Norbert Oettinger provided the etymology **h₂b^hol-tīl-* which would connect Old Icelandic *bolli* “cup, pot, skullcap” and Old High German *hirnipolla* “skull (perhaps head-pot)” (see Rieken 1999, p.487-8) –compare Modern English *bowl*. The word always writes a single [p] in Hittite which suggests a /b/ (PIE **b* or **b^h*). Laryngeals **h₂* and **h₃* that appear initially before a consonant tend to be preserved as *ḫa-C(C)V-*, so phonetically speaking Oettinger’s idea could work. If Oettinger is correct we will seriously have to consider that this might have a **-tī-* suffix. Calvert Watkins (2011, p.10) reconstructs many Germanic cognates to a root **b^hel-²* “to blow, swell”. This includes the Modern English words *ball, bale, bowl, bull, bullock, bollocks, balloon, bold* (<*puffed up*), *boulder*, and some Greek words such as *φαλλός* “penis”. Although he does not explicitly mention the Old Norse or Old High German words that Oettinger mentions, it is fairly clear that he is talking about the same root. LIV does not reconstruct a root **b^hel-*, but that may be because the root usually appears as a noun rather than as a verb. Watkins assumed there must have been an underlying verb (which is a fair assumption given that very few PIE nouns are not attached to a verbal root). If the Greek is connected we can most probably rule out the initial laryngeal Oettinger proposes, and we will have to reconsider the Hittite etymology. Despite all this, culinary terms are easily borrowed from one language to another (e.g. consider the huge number of French culinary terms in English).

ḫapanzuwalatar

HED 3:118-9 “Trust, dependability”

Hittite

No secure etymology here. This appears to be a neuter denominal abstract/action noun suffix in *-ātar*. It is possible also that there is a suffix in *-ala-* (adjectives from nouns and, following substantivization, sometimes agent nouns) here. Even with this much transparent, we still have to find out what is happening in the u-stem noun form **ḫapanzu-* and its associated

denominal verb *ḥapanzuwai*- “be trusted, dependable”. Judging by the meaning of *ḥapanzuwai*- and the way *-ai*- verbs are constructed, I would expect **ḥapanzu-*, if it ever existed, to have the meaning “dependability, trust”. The [z] could have its origin in the regular outcome of **n(t)s* or **tj*. There is only a single [p] recorded in Hittite which suggests we have the sound /b/ which could reflect **b* or **b^h* –if it is inherited from PIE. *ḥa-* could easily be an initial **h₂* or **h₃*. PIE roots tend to have a single vowel, so we could interpret this three ways: (1) the root is *ḥap-* with *-anzu-* morphology tacked on; (2) the root is *ḥ(a)pan(z)-* with the vocalization of the original laryngeal; (3) it is not a PIE root. If it is PIE, we can probably assume that the bilabial consonant was a **b^h* because of the rarity of **b*. It is important to remember that u-stem loanwords are exceptionally rare in Hittite. Hoffner and Melchert (2008, p.53) list only one, ^{NINDA}*taparwašu-* “some kind of bread”, from Hattic. If *ḥapanzuwalatar* etymologically has the sequence **-nsu-* [-*nzu-*], at least it has the sequence of **su* in common with this word. The polymorphic structure seems compatible with surviving Hattic data at any rate, so this origin should not be ruled out.

ḥapāti-

HIL 294-5; HED 3:119-20 “River-land (?)”

Hittite

This word is believed to be cognate with Hittite *ḥapa-* “river” and Cuneiform Luwian *ḥāpa/i-* “ibid.”. The consistent single [p] written in Hittite and Luwian suggests that the consonant is voiced (**b^h* or **b*). This rules out a connection with Sanskrit *áp-* “water” and Old Prussian *ape* “small river, brook” (**h₂ep-*), although we find a number of Italo-Celtic cognates: Latin *amnis* “stream, river”; OIr *aub*; MW *afon*. These all come from a root **h₂eb^h-n-*. The n-stem is attested in Anatolian through Hittite *ÍD-n-*, and Palaic *ḥāpna-* “river”. The same rules that state a single [p] represents a /b/ apply to the [t], which in this case must represent a /d/ (**d^h* or **d*).

ḥapuštiya-

HEG 1:168 “A Drink”

Hittite

There is no etymology for this word of which I am aware. We can assume, if it is inherited, that we would have a form like **h_{2/3}b^heys-t(i)io-* which is unattested as far as I know. There

is a Hittite (and Luwian) verb *hap(p)us(s)*- “make up for” (See HIL 299-300) which has contradictory spelling of [pp] and [p]. The *scriptio difficilior* favours the reading [pp]. [pp], however, usually occurs after [a-a], so we could be witnessing the phenomenon where a ***p** is voiced following a stressed ***ó**. Unfortunately, virtually all of the evidence points to the idea that the [pp](/p/) follows the stressed vowel, not the [p](/b/). If these words can be connected, we might have a meaning “reviving/refreshing/restoring (drink)”. *-iya-* is a relatively common adjectival suffix in Hittite. It is possible that this is built on a t-stem.

^{Giš} *hapūti*- HED 3:134-5 “Lounging chair” *Hittite*

This form has no reliable etymology. We have the Sumerogram ^{Giš} “wood”, which hints towards its construction. There is always a single [p] which suggests, if inherited from PIE, a ***b** or ***b^h** (most likely the latter). We have a double [u-u] as well which may suggest an accented ***ú**. There is always a single [t] in this word suggesting a Hittite /d/ (<***d^h**). With the phonological evidence alone we could posit an etymology like ***h₂o-** “neben, bei; zu – hin” + ***b^heyd^h**- [*LIV* 82-3 wach werden, aufmerksam werden]. Such a root, although attested widely in PIE, is not attested in Anatolian, and the semantics do not seem entirely likely for a piece of furniture. Voiceless stops (fortis stops) are liable for voicing (lenition) when following a stressed vowel, but for this to be the case the assibilation of ***t** before ***i** would have to have occurred after the voicing (lenition) rule applied. Since Luwian also, to an extent, shows the voicing rule (it appears to be a Proto-Anatolian rule), but apparently not the assibilating rule, a ***t** could potentially be reconstructable. This does not get us much closer to an etymology.

^{NA4} *hararazi*- HED 3:140 “(Upper) millstone” *Hittite*

^{NA4} *har-ra-a-ti*[*Cuneiform Luwian* (instr.sg ?)]

This is believed to be a loanword from Akkadian *harāru* “grind”, although it could be possible, judging by its suffix, that was first loaned into Hurrian. It has also been connected with Hittite *harra*- “destroy/smash” (<***h₂erH-**)[*LIV* 271-2 sich auflösen, verschwinden], though it is also possible that this was a loanword from Akkadian in the first place. This

includes the ^{NA4} “stone” Sumerogram, although the meaning here is not in doubt and we would expect a millstone to be made of stone.

^{GIŠ} *hariuzzi-* HED 3:143 “Wickerwork table” *Hittite*

This word appears to have an *-uzzi-* suffix which usually creates instrumental neuter nouns from verbs. ^{GIŠ} *hariuzzi-* is somewhat unusual as far as *-uzzi-* nouns are concerned. This is because it does not appear to be deverbal. This word has been connected to Latin *(h)arundō* “reed, cane”, and Greek ἄρον “*Arum*” (a genus of plants distantly related to lilies). Michiel de Vaan (EDL 279-80) favours reconstructing the initial letter [h] of the Latin with ***g^(h)**, which makes the etymological connection between the Latin and the Hittite very difficult. ἄρον, to my knowledge, does not have a solid etymology, although the initial [α] could correspond with the Hittite initial [h]. The *-uzzi-* suffix at any rate is fairly uncontroversially reconstructed as ***-u-ti-**.

^{NINDA} *harzazu-* HIL 315-6; HED 3:190-8, 206-9 “Breadmash” *Hittite*

^{NINDA} *harzazuta-* “breadmash”

harziaya(l)la- “snail” with *-al(l)a-* denominative agent suffix. (*lit.* a “jar-carrier” – i.e. one that carries a jar on its back).

These words are presumably related to Hittite ^{NINDA} *harši-* “bread”. As ^{NINDA} *harši-* suggests, it is likely that the first [z] in ^{NINDA} *harzazu-* is the outcome of ***rs**. This change of ***rs** to [rz] seems very Luwian. Puhvel entertains the idea that ^{NINDA} *harzazuta-* is a compound (< *haršan-šuwant-*), with the second element being *šu(wan)t-* “filled” (therefore “bread-filled”). Kloekhorst (HIL) connects the word with the element *harš-* which is found in the words for “head” (*haršar, haršn-*) and “jar” (^{DUG} *harši-*) which he claims has a base meaning of “high” – supposedly related to Greek ὄρος “mountain, hill” and Sanskrit *ṛṣvā-* “high” –from PIE ***h₃ers-**. Since ὄρος is clearly an s-stem and the ***s** cannot belong to the root (if these are

indeed cognate), I think ***h₃er-** would be a more appropriate reconstruction [LIV 299-300 sich in (Fort-)Bewegung setzen].

ḥaššanitt(i)- HED 3:221-3; HIL 322-3 “Hearth, fireplace”

Cuneiform Luwian

Kloekhorst (HIL) connects this word to Hittite *ḥāššā-* ‘fireplace, hearth’ and *ḥāšš-* ‘ashes’ which, he argues, go back to ***h₂eh₁s-eh₁-** (cf. Old Latins *āsa-*, Latin *āra-* ‘altar’, Osc. *aasai* [loc.] ‘altar’, Umbr. *asa* ‘altar’ Sanskrit *āsa-* ‘ash’, OHG *essa* ‘ash’). The word *ḥaššanitt(i)-* is more opaque than Hittite *ḥāššā*, as the *nitt(i)* part of the word is unclear. It could be the second word in a compound, although I am not aware of such a word in Luwian. Luwian –*it(t)-* must go back to ***-it-** which has been analysed as a derivative of an instrumental ending in ***-t**, ***-ét**, and ***-it** (LIPP 1:174-7). The lack of a double [tt] in Luwian suffixes such as –*aḥit-* has been explained as a result of lenition between two unaccented vowels (see HIL 580, for example). The fact that we do not find lenition in *ḥaššanitt(i)-* may suggest that we have an accented [i], although it is not entirely clear which one –presumably the first. The biggest problem here is explaining the presence of the [n]. Guus Kroonen (EDPG 38) treats the OHG word *essa* differently to Kloekhorst (HIL). He claims its original meaning was “soapstone”, a mineral which was used around fires for its high heat retention. He considers the connection with “ash” uncertain, suggesting also that it refers to the fireplace/forge itself rather than the contents within –which of course matches the Luwian and Hittite words better. Kroonen further reconstructs the OHG *essa* with PG ***asjōn-**. The n-stem that appears to be present in *ḥassanitt(i)-* appears to agree with the Germanic data, except for the Germanic ***j** which should go back to an ***-i-** suffix. Melchert cites no examples of the PIE ***sj** cluster in Luwian. He claims that ***s** is geminated after ***é** following Čop’s Law (Melchert 1994, p.257), but this would not apply here because the vowel is an ***o**. Nevertheless, Melchert has no other way of explaining the gemination of [s] in his discussion of Luwian (Melchert 1994, pp.229-281), so we should not be hasty to rule out a [ss] from ***sj**. Finally, the final [i], if it is part of the suffix and not the ending, would most reasonably reflect a ***-ih₂-** motion-suffix. I do not think it is necessary to reconstruct a ti-stem.

This word has been connected with the root ***h₂ed-** by Kloekhorst (HIL) [LIV 255 vertrocknen]. The word itself appears to be a participle in *-ant-* with an *-iya-* suffix attached to that (***h₂(e)d-ent-ijo-**). Since the *-iya-* suffix has the function of creating adjectives from nouns and adverbs (cf. *išpantiya-* “nocturnal” from *išpant-* “night”), I would question Puhvel’s (HED) assumption that the *-iya-* made the word a “nominal derivative of *ḫatant-*.” I think it is more likely that the word was first an adjective, “dry”, which was later substantivized as “dry (lands)”.

Puhvel (HED) argues that this word is Hurrian in origin. The noun has a derived verb *ḫatiwital-* “to make an inventory”. Puhvel sees the verb as being based on a Hurrian case form in *-ta*. The presence of a single [t] indicates more likely a /d/.

This word has an ^{URU} ‘town, city’ Sumerogram. It also has an *-ili* adverbial suffix. When attached to toponyms, this suffix usually refers to language. Therefore, here we have the meaning here “in the Hattic language”. Compare ^{URU} *ḫurlili* “in Hurrian”, *luwili* “in Luwian”.

This word is morphologically opaque. It may contain a *-zil-* suffix. Puhvel (HED) entertains the idea that it may be related to Hittite *ḫatt-^{a(ri)}* “to pierce, prick, stab, hit, engrave” (< **2.?*h₂et-**) [LIV 274 ein Loch machen, stechen]. The *-zil-* suffix is used –according to Hoffner and Melchert (2008, p.61) –to form deverbal result nouns (e.g. *tayazzil* “theft” from the verb “to steal” and *sarnikzil* “compensation”). I am not sure I would interpret either “theft” or “compensation” as result nouns, however, but rather as event nouns (e.g. the *theft* occurred yesterday; the *compensation* was late). An alternative morphological analysis could be that it contains a ***-lo-** suffix built on top of a *i*-stem. There would be some semantic challenges in

connecting this word with a root like “to pierce, stab”. Puhvel sees a similar semantic parallel in the case of Latin *pungō* “to pierce, prick, sting” and *pugnus* “fist, fistful”. There is of course *pugnō* “to fight, struggle” too.

^{MUNUS} *haz(i)kara(i)-* or *hazhara-* HEG 234; HED 3:280-1; See Kimball (1999, p.293) “Female percussionist in temple service”

This word refers to a female percussionist in the temple service. Puhvel (HED) connects the word tentatively to Hittite *hatt*-^{a(ri)} “to pierce, prick, stab, hit, engrave” or perhaps “strike” (< **2.*h₂et-**)[LIV 274 ein Loch machen, stechen). Late verbal form *hazzika/e-* seems to reflect this root with a ***-sk'e-** iterative suffix. Puhvel sees a potential *-ara-* suffix, although such a suffix is not listed by Hoffner and Melchert (2008), although the *-tara-* suffix is. On the other hand, Puhvel does mention the example of Hittite ^{GIS}*hattara-* “prick, awl” which appears to be strongly connected to *hatt*-^{a(ri)} “to pierce, prick, stab, hit, engrave”. It is unlikely this reflects ***h₂et-toro-** because we would expect an affricate to arise regularly between the dentals (***TT** > ***TsT**, see Kimball 1999 pp.285-6), so it may be best to assume that there is a suffix *-ara-*.

^{NINDA} *hazizita-* HED 3:284-6; HEG 233-4 “A cake, ear-shaped bread(?)” *Hittite*

^D *Hazzizi-* “A deity (^D) associated with wisdom (?)”

This word is usually connected with *hazzizzi-/ hazzizzu-* “ear; wit(s), wisdom”. This appears to be connected to the Akkadian *hasīsu* “thinking, intelligence, wisdom”. If this is the case, then this does not have an inherited ***-ti-** suffix. It is understood that ears of bread (^{NINDA}) were used to attract deities from the underworld during rituals (HED).

hazziwi(ta)- HED 3:282-4 “Rite, Cult Performance, Ceremony” *Hittite*

hazziwitašši- “Rite, Cult Performance, Ceremony”

ḫazziwitašši- has a Luwian appurtenance suffix in *-ašši-*. *ḫazziwi(ta)-* appears to be Hurrian by its morphology (*-ta-* case suffix), so it is fairly safe to conclude that this is not Indo-European in origin.

ḫazziyaššar HEG 231-2; LIV 274 “Anxiety, concern, affliction” *Hittite*

Tischler (HEG) argues that this is verbal abstract in *-aššar* suffixed to the stem **2.*h₂et-** [*LIV* 274 ein Loch machen, stechen). This would suggest that it is not a ti-stem.

^{UZU} *u(wa)ḫḫurti-/a-* HEG 263; HED 3:418-9; See Kimball (1999)p.187 “Windpipe, throat” *Hittite*

This is possibly onomatopoeic. Likewise it is quite common for body parts to have reduplication, as this word appears to have. Compare Armenian *xaxurt* ‘windpipe’ and Sanskrit *phupphusa-* ‘lung’ as well as Hittite *ḫaḫhari-* ‘lung’ (See HED). Kimball seems to take this word as a t-stem in the older forms of Hittite, with an [i] added in New Hittite and Luwian. To my knowledge, this word is never spelt with [tt] at the end, so it is questionable whether we can argue for a ***t.*d**, or ***d^h**, seems more likely.

ḫullanza- HIL 358-60; HED 3:363-8 “Defeat” *Hittite*

ḫullanzai- “infliction, defeat”

ḫullanzatar /ḫullanzann- “infliction, defeat”

ḫullanzeššar /ḫullanzešna- “infliction”

This word is connected to the Hittite verb *ḫulle^{-zi}/ḫull-* “to smash, defeat”. Kloekhorst (HIL) argues that the root must reflect an initial ***h₂ue-** because ***h₃** would not have been preserved before the ***u**, whereas ***h₂** would have. If this is the case, we would have to construct a root ***h₂uelh₁-**. Kloekhorst assumes this root is not related to the Hittite verb *walḫ-* “to hit, strike” because that would reflect ***uelh₃-**. LIV does not reconstruct a verbal root ***h₂uelh₁-**, although it suggests very hesitantly in a footnote –knowing that the initial [ḫ] required a satisfactory explanation –that the Hittite verb could be connected with ***uelh₃-** [*LIV* 679 schlagen].

Kloekhorst assumes that the double [ll] was a result of assimilation of the ***ln** cluster, so a ***-ne-** verbal infix has been proposed. *hullanzaai-* would have to be a participle in ***-nt-** built onto the verbal stem (***h₂uel-n-h₁-nt-**). The [z] is a little difficult to explain. As we have seen above, ***ns** is typically realized as [nz] in Hittite. [nz] can also represent the sequence ***nts** that we would find ending the nominative singular of an nt-stem. It is possible that [nz] could represent ***nti-V** and perhaps even ***nt-T**, which would create a sequence ***nt^sT**. I am not aware of any t-, to-, or ti-stems being added to a nt-stem however, so I am inclined to reject that theory. It seems more likely that we may be seeing an s-stem, or i-stem, extension to the nt-stem, unless the [z] has been analogically restored from the nominative singular of the participle.

hulpa(n)zana-/ena-

HEG 281 “Button, buckle”

Hittite

Tischler (HEG) considers this to be of non-PIE origin. It is hard to determine what is going on morphologically. There is a Luwian possessive and diminutive suffix in *-(a)nna/i-* (cf. Luwian *āššuššann(i)-* “belonging to a horse”) which was inherited in Hittite from PIE (***-eno-**) as *-an-* (cf. **halugan-* “having news” from the *-ili* manner adverb *haluganili* “in the manner of somebody carrying/possessing a message” (talking about soldiers) from *haluga-* “message, news”). Nevertheless, even if this was the derivational suffix involved, we have no evidence for a word **hulpa-* or **hulpant-*, which makes this totally speculative. The [z] following an [n] probably suggests this is not a ti-stem.

hunhumant-

HEG 286; HED 3:426-8; See Rieken (1999) p.118a, and Kimball (1999) pp.181-2

“Flood, deluge, flow”.

Hittite

This word is fairly problematic. It appears to have reduplication (unless *hun-* is the Hattic word for “great” –this would presumably make this non-PIE). The sequence [umV] in Hittite can arise by dissimilation of ***uṃV**, although the [m] could easily have just been an ***m**. The ending in *-azzit* that occurs is presumed to be a combination of the nt-stem in the nominative singular plus the the enclitic *-set* third person inanimate nominative singular possessive

pronoun (*ḥunḥumazzit* < ***-uḡ-ont-s=set** “its flow”). It resembles Greek t-stem *κῶμα* “anything swollen, wave” in a number of ways (from ***k'ueh₁-mṡt-**), but this is likely to be by chance. Although there are instances where scholars have proposed that the reflex of ***k'** assimilates to Hittite [h] before another [h], this is generally assumed to be wrong (see Melchert, 1994, p. 164 for a short discussion). This could not possibly be the case any way, as we would not be able to explain the second [h] that could have initiated the assimilation, nor would we have a good reason to expect the [n] in the Hittite form if we maintain that the words are etymologically related. Armenian also attests a word *xoxom* “torrent”. It appears to have reduplication and there have been some attempts to connect the Armenian [x] sound to Hurrian or Hittite [ḫ] (See, for example, EDA p.326). This is very unlikely a ti-stem.

^{Giš} *ḥunzinar-* HEG 289-90; HED 3:383-4 “Musical instrument” *Hittite*

Zinar has been recognized as a Hattic word for “music”, although this doesn’t mean its origin is Hattic (cf. Akkadian *zannaru* “lyre”). We have the ^{Giš} “wood” Sumerogram which partly explains its construction. The first element *ḥun-* has been connected with the Hattic word for “great”, as represented by the Sumerogram GAL.

ḥupparatt- HEG 294; HED 3:392 “Pelvis” *Hittite*

Hittite has a word *ḥuppar(a)-* “bowl, pot, keg” from which this form appears to be derived. The form has a *-tt-* suffix which forms common gender action/result nouns from verbal and adjectival bases -although this instance is not a deverbal, a deadjectival, or an action/result noun. Archaic *šiwatt-* “day” is possibly another example of a Hittite tt-stem being used this way (see also CLuwian ^d*Tiyad-* “Sun God”, and HLuwian ^(DEUS)*SOL-ti-i-ša* “Sun God”). This is not a ti-stem.

ḥurtaai- HEG 303; HED 3:433-7 “Curse, bane” *Hittite*

Derived from the verb *hu(wa)rt-* “to curse”. The Hittite *-ai-* suffix productively creates common-gender action nouns from verbal roots. This is not a ti-stem.

huwarti- HEG 313; HED 3:437-8 “Concoction, infusion, decoction, extract” Hittite

hurtiyalla- “infusion vessel, concoction bowl” (*-alla/i-* Luwian denominal noun suffix)

A clear etymology for these forms is still lacking. Puhvel (HED) thinks that the most likely cognate is Lithuanian *vérdū* “boil, seethe”. *huwarti-* looks a lot like a ti-stem, but Puhvel seems to think it is a Luwian i-stem (hence the lack of assibilation). The single [t] usually suggests an etymological ***d** or ***d^h**, but here it may well be a ***t**. The ultimate interpretation of the suffix depends heavily on whether the root has a final dental stop or not. The *hurtiyalla-* form is a bit unusual in that forms describing inanimate objects derived with this suffix usually take the neuter gender, whereas this has the common-gender.

^{TU7} *hurutil-* HED 3:408 “Name of a dish” Hittite

This word is not particularly well understood. It problematically shows at times a single [t] as well as a double [tt] which does not help narrow down an etymology. That I know of, there is not a suffix in *-til-* or *-il-*, although there are suffixes in *-zil-* (result nouns from verbs) and *-ili-* (adjectives from various bases). The Sumerogram ^{TU7} “watery gruel” is at least fairly clear. It has been suggested (see HED) that it could be derived from an obscure verb *hu-ru-ta-it* “to tip over (?)”.

^{NA4} *hušt(i)-* HED 3:411-13; HEG 317 “Mineral substance. Possibly amber” Hittite

Puhvel (HED) believes this was a native t-stem in Hittite which existed alongside a Hurrianized stem variant. The Sumerogram ^{NA4} “stone” helps the interpretation of this mysterious item. It is soft enough to be ground up by mortar and pestle, and it appears to be burned in rituals. Puhvel comes to the conclusion that it must be some sort of resinous substance like amber. Presumably frankincense, myrrh, etc. could also work here.

^{GIŠ} *elzi-*

HED 2:269-71; HIL 240 “Pair of scales”

Hittite

Puhvel (HED) proposes that *elzi-* possesses an old PIE **-ih₁* dual ending. If so, assuming it is inherited from PIE, we must have a root like **h₁elt-*. Kloekhorst (HIL) supports this reconstruction, although he cannot find any cognates.

^{GIŠ} *intaluz(z)i-* HED 2:373-4; HEG 362 “Shovel”

Hittite

This word appears to have the suffix *-uzzi-* which is used to form common-gender and neuter instrument nouns from verbs. The interpretation of the word as “shovel” also makes it more likely that this does have the *-uzzi-* instrumental suffix. The *intal-* part of the word is unexplained, however. Hoffner (see HED) suggests it could have a Hurrian origin in *in-te-la-am* which appears in a list of implements.

ippiyanzana- HED 2:377-9; HEG 364-5 “Grapevine”

Hittite

Connections here have been made to the divine nurse of Dionysus, ἰππα. There is no etymology for this word, so it is assumed to be native to the Anatolian region. The word has similar morphology to *hulpa(n)zana-/ena-* “button, buckle”. It possibly shows therefore a diminutive or possessive suffix in **-eno-*. The *-anz-* portion of the word resembles an *-ant-* suffix, and it is possible that it has a denominal possessive function (cf. Hittite *utneyant-* “population, inhabitants” < (those) possessing *utne-* “land”). Too many aspects of this word are in doubt, and it is unlikely to be a *ti*-stem. It may well be a loanword.

išgapuzzi- HED 2:415-6; HEG 399; LIV 549-50 “A supporter, brace”

This word appears to be a neuter instrument noun in *-uzzi-*. It is something that appears in a list of cult objects. It is a hapax and is poorly understood. Puhvel considers whether the word should be accepted as it stands orthographically, or whether it should be reconstructed with a *-ta-* sign instead of *-ga-*. There is Hittite verb *istapp-* “to cover, to seal”, so if this word is a mistake we could assume a meaning “the thing with which one covers, or seals” (i.e. “a lid, cover”). On the other hand, if we accept the spelling, a connection with Vedic *skabh-* “make

firm, support” (< ***skeb^hH-**) [LIV 549-50 stützen] could be possible –hence the translation “supporter, brace”. There is also another root ***skab^h-** (LIV 549 kratzen, schaben) which could give a meaning “scratcher, scraper”.

išhuzzi- HED 2:398-403; HEG 395; HIL 391-3; LIV 544 “Girdle” *Hittite*

This is a common gender instrument noun in *-uzzi-* derived from the verb *išhiya-* “to bind” (< ***sh₂ej-**) [LIV 544 fesseln, binden].

^(DUG) *išpanduzzi-* HEG 415-6; HED 2:436-41; HIL 404-6; LIV 577-8 “Libation contents or vessel”
Hittite

^(DUG) *išpanduzziyaššar* (n.) “Libation vessel”

^{LÚ} *išpanduzziyala-* (c.) “Libation bearer”

The first item here is a neuter instrument noun in *-uzzi-*. As with *išhuzzi-*, it is fairly uncontroversial. It is derived from the root *išpant-* “to libate, sacrifice” and appears to reflect the verbal root **1.*spend-** [LIV 577-8 libieren]. The Sumerogram ^{DUG} means “container, vessel”, so it is assumed that when this pointer is used, it refers to the vessel from which the libation is poured. At some times the word *išpanduzzi-* has the meaning of the contents of the libation (i.e. “the contents with which one make the libation”). *išpanduzziyaššar* on the other hand always refers to the vessel itself. The *-ala-* suffix in *išpanduzziyala-* was usually used to form adjective from nouns. Subsequently these adjective were often substantivized with a meaning of “one who deals with X”. The meaning of *išpanduzziyala-* is “one who deals with the libation vessel or libation contents”.

išpantiya- HED 2:431-5; HEG 409-11; HIL 404 (adj.) “Of the night”
Hittite

^d *išpanzašepa-* “Spirit of the night”

The word has an *-iya-* adjectival suffix built on top of an *-nt-* suffix. Etymologically it has been connected with Sanskrit *kṣáp-* “night” and Avestan *xšapan-* /*xšafn-* “night” (see HIL). The PIE form, if these words are connected, would be **k^(u)sep-* (Zero-grade root in the case of the Hittite). Puhvel (HED) speculates that it may have been an n-stem originally as reflected by the Avestan data, which was later extended as a t-stem (**k^(u)sp-on-t-(i)io-*). In the case of *^dišpanzašepa-*, this is a compound word presumably reflecting *išpant-šepa-* “night-spirit”.

^{Giš} *išparuzzi-* HIL 406 “Rafter”

Hittite

This word appears to be connected to the Hittite verb *išpār-/išpar-* meaning “to spread (out), to strew” from PIE **3.*sper-** [*LIV* 580 *ausstreuen*]. This is obviously an instrumental type noun in *-uzzi-*, although the semantics are a little unclear (e.g. “the thing with which you spread out/strew”(??)).

ištanzan- HED 2:468-71; HEG 430-2; HIL 414-5 “Soul, spirit, mind, living things (pl), persons (pl)” Hittite

^d *ištanzašši-* “Deity of the soul”

This word is reconstructed by Kloekhorst (HIL) as **sth₂-ent-i-on-*. It presumably belongs to the root **steh₂-* [*LIV* 590-2 *wohin treten, sich hinstellen*]. It is possible that this is built on a nt-stem with a participle function (e.g. “standing”), which seems more likely than the other functions of *-ant-*. There is a Hittite suffix in *-an-* which forms neuter action/result nouns, but it is difficult to see this semantically. Likewise, a participle in many ways is already an action noun, so we might have to assume *ištanz-* was not interpreted as a participle if it had an action noun suffix attached later. The form resembles the Hittite words *ippiyanzana-* and *hulpa(n)zana-/ena-*. *^dištanzašši-* has the *-ašša/i-* denominal adjective appurtenance suffix. This has subsequently been substantivized. This suffix is quite common in city and deity names.

^{NINDA} *iyatti-* HED 2:352-3; HEG 348 “A type of bread or cake”

Hittite

This word has the Sumerogram ^{NINDA} signifying that it’s a type of “bread” or “cake”. The form has a double [tti] which is phonetically /ti/. This sequence would not be expected to exist if we consider this word to be native to Hittite ([zi] would be expected). For this reason it is reasonable to assume that it is non-Hittite in origin. It could perhaps be Hurrian or Luwian (***ti** remained unassibilated in Luwian). Unfortunately there is no satisfactory etymology of which I am aware.

izza(n)-/ ezzan- HED 2:321-3; HEG 119 “Chaff, straw; material goods”

Hittite

Puhvel (HED) suggests an etymology ***ēsyo-** or ***ēso-**, connecting the Hittite with Greek ῥῖα (neut. pl) “provisions for a journey, food (for wolves and leopards), husks or chaff”. This seems unsatisfactory because it assumes the change of ***s** > [z], or ***si** > [z] –a change for which there appears to be no precedent. Hjalmar Frisk (GEW) suggests that Greek ῥῖα belongs to the verb εἶμι “I go” (***h₁ei-**)[*LIV* 232-3 *gehen*], although to arrive at such a form we would probably have to assume a reduplicated zero-grade root with an s or u-stem extension, otherwise we would be unlikely to find a long compensatory lengthened (by loss of laryngeal ***h₁**) /ē/, and we would find a diphthong instead of the simple [i]: ***h₁e.h₁(e)i-s/u-h₂**. I do not find this etymology very adequate as there are too many morpho-phonological questions unanswered, as well as there being a tenuous semantic link. I do not think it is necessary to reconstruct a long ***ē** in the Hittite form, although the short ***e** was probably accented.

^d *izzištanu-* HED 2:465-8 “A Deity”

Hittite

Puhvel (HED) suggests that this was a compound from the name *Ištanu-* “a sun-god(dess), solar deity” and a Hurrian first element *izz-*. *Ištanu-* in turn is a Hittite version of Hattic *Estan-* or *Astan-*, so it is fairly safe to conclude that this is not Indo-European let alone an inherited ti-stem.

This term with its Sumerogram ^{DUG} “container, vessel” is interesting as it appears to be formed from two Sumerograms GAL “cup, beaker” and DI “good” (“good cup”). These Sumerograms would have represented the Hittite phrase *āššu zēri*, and after a while were apparently loaned straight into Hittite as /gal.di/. This is not a ti-stem.

kaluti- HED 4:33-5; HEG 471-2 “Circle, (closed) group, set, coterie, community” *Hittite*

kalutiya- “to lump together (for worship), treat jointly (for Cultic purposes), celebrate (the Gods) as a group”.

It is unclear whether this word is of IE origin, although some scholars (see HED) have connected it with the PIE verbal root **k^(h)leh₃d^h-* [LIV 362 spinnen]. This word writes a single [t] which suggests, if inherited, that this was originally a **d* or **d^h*. There are a number of rules governing the development of laryngeals in PIE and Anatolian. One rule is the loss of a laryngeal in the same syllable as an o-grade vowel and a resonant (PIE **HRo* > PIE **Ro*; **oRH* > **oR*). Another is the loss of **h₃* in PA between vowels or following a consonant. Vowel anaptyxis ([u], [i], or [a]) with inter-consonantal laryngeals in Anatolian appears to occur in certain conditions, but all cases –as far as I am aware –retain the laryngeal. For this reason, it becomes difficult to explain the [u] in *kaluti-* as an anaptyxic vowel. Evidence is lacking for anaptyxis occurring with **h₁*, although that may be the only way to reconcile the forms. It is possible that the first long [ō] that occurs in Greek κλώθω “twist by spinning, spin” is from an o-grade plus laryngeal **h₁* (**oh₁*), although I think it is unlikely that the aorist and present forms of this verb would take an o-grade rather than the more usual e-grade.

kargaranti HED 4:89; HEG 511 “Readily, willingly, eagerly”

Hittite

This is possibly of Luwian origin. It is believed to be a participle in **-nt-* with a Luwian *motion* suffix in *-i-* built on a reduplicated root *1.*g^her-* [LIV 176-7 Gefallen finden,

begehren]. Cf. Hittite *kari(ya)-* “to gratify”. Reduplication is used to form intensives in late-PIE (particularly Vedic), but whether or not it does in Anatolian is another question.

karuššiyantili HED 4:116-7; HEG 529-30; HIL 458-9 “Tacitly, quietly, secretly” *Hittite*

karuššiyantili has the productive adverb suffix *-ili*, which presupposes a form **karuššiyant-* which is clearly a participle form in *-nt-* from the verb *karuššiya-* “to be silent”. Kloekhorst (HIL) reconstructs a root **gr(e)us-je-* which he connects with Old Swedish *krýsta* “to gnash” and Gothic *kriustan* “ibid”. At any rate, there is no reason to call this a ti-stem.

karza(n)- HED 4:117; HEG 531-2; HIL 459-60; LIV 356 “Spool, bobbin” *Hittite*

karza(n)- is fairly consistently reconstructed to the root **1.*kert-** [LIV 356 drehen, spinnen]. Most of the debate lies in what derivational morphology lies behind the root. The nominative/accusative singular, for example, lacks a final [r], so it is unclear whether this is an r/n-stem throughout the paradigm built on an s-stem (with a dissimilatory process that deletes the **r*), or a simple s-stem in the nominative/accusative singular with an r/n-stem on top throughout the rest of the paradigm. Kloekhorst suggests it could have a suffix **-sōr/-sn-*, but I am not sure what precedent he has for reconstructing such a suffix (there is the suffix *-eššar*). This is not a ti-stem.

^É *kaškaštaipa-* HED 4:120-1; HEG 535 “Gatehouse, portal” *Hittite*

This reduplicated word has the Sumerogram ^É “house, household, temple, plot of land”. It appears to be a loanword from Hattic (*kastip* “gate”).

katkattim(m)a - HED 4:134-6; HEG 547-8 “Shaking, quake, shrug, shiver, trembling” *Hittite*

Related to the verb *katkattiya-* (“shake (oneself), quake, shrug, squirm, shiver, tremble” (HED); “calm, pacify, soothe” (LIPP 419); “kneel, go down”¹⁰⁷). Puhvel (HED) assumes that this word is onomatopoeic with iterative-force reduplication. Other etymologies have

¹⁰⁷ J. P. Mallory and D. Q. Adams, *The Oxford Introduction to Proto-Indo-European and the Proto-Indo-European World* (2006) p.292; and D. Q. Adams *A Dictionary of Tocharian B: Revised and Greatly Enlarged* (2013) pp.168-9.

connected the word with the particle ***kát-** “hinab, herab” (LIPP 2:419-22) which often has the sense of “down, under”. ***kát-** only appears in Greek and Anatolian, and possibly Tocharian. The suffix *-ima-* forms common gender action nouns from verbs and adjectives. It is unlikely this is an inherited ti-stem as we would expect assibilation of the [tt] before an [i].

^{Giš} *kattaluzzi-* HED 4:124-5; HEG 543-4; HIL 464-5; LIV 420 “Threshold” *Hittite*

kattaluzzit- “threshold” *Cuneiform Luwian*

luttāi-/lutti- “window” *Hittite*

Kloekhorst (HIL) takes this word as a compound of *katta-* “alongside” and *luttāi-/lutti-* “window”. He assumes that since in *lutti-* the [tt] remained unassibilated before the [i] – presumably because the original ablaut would have created a paradigm with **luttāi-* and **luzzi-*, but the [tt] form ended up as the default after paradigm levelling. If *luttāi-/lutti-* and *kattaluzzi-* are connected, the lack of analogous levelling into the *kataluzzi-* paradigm suggests that native Hittite speakers no longer connected the two words. *luttāi-/lutti-* and *kattaluzzi-*. Puhvel, following Eichner, (see HED) suggests that this had the form ***leuH-to-** [LIV 417 abschneiden, lösen] with the apparent addition of an ***-i-** suffix. Kloekhorst is very sceptical that such a diphthongal stem could ever be produced in this way, and I am inclined to agree. He thinks it is more likely that this word follows a similar pattern to *hastāi-* “bone” and *hurtāi-* “curse”. That would suggest that this had a t-final root, probably reconstructable as ***?leut-** [LIV 420 sehen], to which Kloekhorst also connects Greek λεύσσω “look, gaze, see”. This seems semantically better than a root meaning “to cut”, and in addition to this to-stems are exceptionally uncommon, if they exist at all, in Hittite.

katta/i- LIPP 2:422-8 “mit, neben, bei” [LIPP zusammen, mit, bei] *Hittite*

Dunkel (LIPP) reconstructs the proclitic *katta/i-* as ***kó-th₂ éh₁**. Melchert (1994, p.126) is reluctant to reconstruct this word without a syllabic nasal (***kṃ-t-**), although he does

acknowledge that ***m** is regularly reflected by Hittite [am] before a consonant. This is not a ti-stem, hence the lack of assibilation.

^{GADA} *kazzarnul*- HIL 466-7; See Rieken (1999) p.467 “A cloth for drying” *Hittite*

Rieken argues that this word comes from a root ***k'ser-** meaning “to dry” (cf. Greek ξερών “dry land”). Rieken suggests that the combination of ***k's** becomes an intermediary ***k'ts** before becoming Hittite [kazz]. The suffix in *-ul-* forms neuter nouns from verbs –and very occasionally from adjectives (one example *aššul* “goodness”) or nouns (*paḥḥurul* “an implement” and possibly the word in question). Hoffner and Melchert (2008, p.59) argue that *kazzarnul-* comes from the noun *karza(n)-* “spool, bobbin” (< **1.*kert-**) [LIV 356 drehen, spinnen]. This reconstruction would assume sporadic assimilation of [rz] to [zz]. Rieken’s reconstruction would assume an unattested, but well formed, iterative nu-stem verb **kazzar-nu-*. The Sumerogram ^{GADA} means “linen, cloth”. This is not a ti-stem.

^{DUG} *gazzi-* HED 4:141-2; HEG 549-50 “Container for liquids” *Hittite*

The Hurrian homophone *ga-az-zi* and the form *gazzitura/i-* suggest to Puhvel that this is a Hurrian form, although it is assumed that it was lent to Hurrian from Akkadian *kāsu* “cup”.

kēz, kēzzi HEG 564; LIPP 2:405-15 “From this” (Ablatival adverb of pronominal stem. Near deictic) *Hittite*

zāti “here, so, in this way” [instrumental] *Cuneiform Luwian*

za-ri+i “ibid” *Hieroglyphic Luwian*

zi-ti, zi-ri+i “here” *Hieroglyphic Luwian*

zīti- “man” < “local, one who is here [on earth]” *Cuneiform Luwian*

All these words seem to reflect the same root that has a few variant forms (***k'ó-** and ***k'í-**) and some variance in ablaut (zero-grade, e-grade, and o-grade). According to Dunkel (LIPP) the Hittite words reflect ***k'e-ti**, *zāti* and *za-ri+i* reflect ***k'o-ti**, *zi-ti* and *zi-ri+i* reflect ***k'i-ti**,

and *zīti-* reflects ***k'ej-ti**. Nothing about the derivational morphology is particularly controversial here, although Melchert notes that [r] in Hieroglyphic Luwian, in certain cases, arises from rhotacism of a PA ***d** < PIE ***d** or ***d^h** (1994, p.237).

kelti- HED 4:142-3; HEG 551 “Wholeness, health, weal” *Hittite*

Puhvel (HED) states that this is an example of Hurrian ritual vocabulary. In any case, we would not expect the [t] to remain before an [i] if it were Hittite in origin unless it reflected a /d/ < ***d** or ***d^h**.

kinzalpa- HEG 581 “A piece of clothing” *Hittite*

kinzalpašša/i- “of the piece of clothing” (has the denominal appurtenance adjective suffix in –*ašša/i-*).

Tischler (HEG) notes that the second form has Luwian glossing, so this might indeed be the origin. The appurtenance suffix in –*ašša/i-* is often associated with Luwian borrowings (see Hoffner and Melchert p.62). Nevertheless, the sequence of ***n(t)s** is usually reflected by Hittite and Luwian [nz], so whichever the origin it is unlikely to be a ti-stem.

kipriti- HED 4:188; HEG 583 “A bird; also a mineral (possibly sulphur)” *Hittite*

One word has the Sumerian determinative ^{MUŠEN} “bird”, and the other has the determinative ^{NA4} “stone”. The second one is certainly related to the Akkadian *kibrītu*, Hebrew *guprīt*, Arabic *kibrūt* “sulphur” –all of which are in turn probably related to Akkadian *kibru* “riverbank”. The link between “sulphur” and “riverbank” is possibly the fact that the headwater of the Tigris river was often found to be full of sulphur. Puhvel (HED), along these same lines, speculates that the bird was some sort of bird found on or around river banks. I think we can safely assume this is a loanword and not a ti-stem.

^{LÚ} *kirištiennaš* ? HEG 584 “Name of a priest in the Ishtar cult” *Hittite*

Tischler (HEG) states that this name is borrowed from Hurrian *kiristi*.

^{SI} *kiputi-* HED 4:188; HEG 583-4; LIV 555? “Hoof (or something of that sort)” *Hittite*

This word has the Sumerogram ^{SI} which means “horn”. This word is a hapax, and as such it is difficult to say for sure what it signifies. Scholars have made connections with words such as Greek κόπτω “strike, knock, beat”, Germanic words for “hoof” (ON *hófr*), and Lithuanian *kapiù* “strike, hew” (See HEG for a brief discussion). This word is written with a single [t] which suggests this is originally a **d* or **d^h* rather than a **t*. We would also expect to see a [z] before and [i] if the word was inherited and the suffix was **-ti-*. If the Indo-European words are truly cognate, we would expect the word to derive from the verbal root **1.?(s)kep-** [LIV 555 hacken, hauen].

^{NA4} *kirnuzi-* (*pišnuzi-* ?) HEG 584-5 “Something (mineral) for glass-making” *Hittite*

This word has the Sumerogram ^{NA4} “stone”. Tischler does not attempt an etymology, and this may partly be due to the phonetic uncertainty concerning the first Cuneiform sign 𒊕 (can represent *kir*, *gir*, *piš*, (*paš*), *pùš*, or *biš*).

^{DUG} *kizzul-* HEG 598; See Rieken (1999) pp.468-9 “A (honey) jar” *Hittite*

This is a container (^{DUG}) that apparently holds honey. According to Rieken it contains a *-ul-* suffix which forms neuter abstract nouns from verbs –and very occasionally adjectives and nouns. The word has been connected with Greek κοῖτ-ίς/ίδος “box, basket” which is derived from the verbal root **1.*k'eṯ-** [LIV 320 liegen]. This etymology would almost certainly imply a reconstruction of **k'i-ti-ul-*, as an **i* should not cause a following **t* to assibilate, but an **i* or **j* after would. There is unfortunately no attested verb (e.g. **kizz-* or **kizziya-*), or an adjective or noun (**kizzi-*) that can explain the presence of an *-ul-* suffix. It is possible that it is a loanword.

^{DUG} *gazzul-* See Rieken (1999) p.469 “A container of some sort” *Hittite*

This hapax is obviously some kind of container (^{DUG}). In many ways it resembles the item above, ^{DUG}*kizzul-*, but this may just be chance. It certainly has the same obstacles to reconstruction as the previous word. It is possible that it is a loanword.

kuenzumna- HED 4:212; HIL 486 “Coming from where? Of what origin?” *Hittite*

This word has some complicated morphology. It is well understood to have the interrogative pronoun **kʷó-*, **kʷi-* at its base (LIPP 2:452-79). Kloekhorst (HIL) reconstructs the root as an o-grade variant of the form with **i*, (i.e. **kʷoi-*). The second part of the morphology is somewhat unusual. It is believed that the *-nzan* was borrowed directly from words such as *kinzan*, *šumenzan*, and *apenzan*. It is not uncommon to see analogical borrowing across the pronominal paradigm, so we would have assume that Hittite gained an unattested genitive plural **kuenzan*. Kloekhorst reconstructs *kinzan* as **kʷi-n-h₁-som*. The first *-n-* seems to be present elsewhere in this paradigm (e.g. dat./loc.sg. *kedani* and instr.sg./pl. *kedanta*). Kloekhorst assumes there must be an intervening laryngeal between the **n* and **som* (note that the PIE genitive ending is usually reconstructed as **sōm* or **soHom*), because you would normally expect **ns* to assimilate to [ss]. I do not really see a functional role for an **-h₁-* morpheme here. The reflex of **ns* (and **ms*) is very complicated in Hittite, but it is assumed that **ns* generally became [ss]. Following this assimilation, there are secondary cases where a Proto-Anatolian **n* ended up next to a **s*. The outcome here is generally [nz].¹⁰⁸ I do not entirely agree with Kloekhorst that **kʷoi-nH₁s-h₂un-o-* is the best reconstruction of *kuenzumna-*. Looking at the Luwian cognate of *kā-/kū-/ki-* “this”, we see *za(n)zi* (nom./acc.pl.comm) and *zatiia(n)zi* (dat.pl.). Likewise looking at the Luwian paradigm of *apa-* “that”, we see *apa(n)zi* (nom./acc.pl.comm) and *apata(n)za* (dat.pl.). All of these forms attest n-extensions of the root. The Luwian interrogative pronoun (cognate with Hittite *kui-* / *kue-* / *kuua*) attests the ending *-i(n)zi* (nom./acc.pl.comm). It seems that the *-nz-* ending in Luwian is a marker of common gender plurals. We must also note that the acc.pl. in the PIE nominal paradigm is usually reconstructed as **-ns/*-ņs* (presumably from **-ms/*-ņms*), and is

¹⁰⁸ See Kimball (1999), pp.329-344, for a good discussion of this sequence.

probably reflected in the Hittite acc.pl. common gender ending in *-uš* found throughout the nominal and pronominal paradigm (e.g. *ku-i-uš*).¹⁰⁹ I think it is more likely that Hittite built a form directly on the acc.pl.common gender ending, which became reanalysed as a stem. **kuenzan*, if it existed, would reflect **k^uoj_i-ms-* plus a regular genitive plural in *-an* (< PIE **-ōm* or **-oHom*). One thing that is generally agreed upon is the presence of the appurtenance suffix in *-umen/-umn-* which probably reflects PIE **-h₂u^{en}/-h₂un-*, and which can be compared with the Sanskrit *-van/-vn-*, and the Greek *-ᾱov-*, suffix. The complete form would be something like **k^uoj_i-ms-h₂u^{en}-o-*.

kunistayalli- HED 4:255; HEG 636-7 “Something privileged, classified, or confidential” (meaning somewhat unclear) *Hittite*

Not much is known about this word. Puhvel (HED) suggests it could be connected with **g^hen-u-* “knee” and *kunustal(l)a-* “kneeler (?)”. Tischler (HEG) proposes that the sound group [aya] could have been reduced to [a] in the case of *kunustal(l)a-*. I think it is unlikely we have a ti-stem here, although it is difficult to know for certain because the morphology is opaque. If this has the Luwian *-alla/-alli-* suffix that derives nouns from other nouns, we would probably have to assume that a hypothetical **kunistay-* once existed.

^{NA4} *kunkunu(z)zi-* HED 4:251-4; HEG 635; HIL 494 “A hard mineral or meteoric rock. Found in clubs and weapons.” *Hittite*

This reduplicated word has been reconstructed as having the root **g^hen-* [LIV 218-9 schlagen], Hittite *kuen^{zi}/kun-/ku^ua(n)-* “kill, slay, ruin”. Semantically it seems unsurprising that we find a root meaning “to strike” or “to slay” with the material used to form a weapon. This word appears to have the *-uzzi-* instrumental suffix which would give a meaning along the lines of “the (^{NA4} “stone”) thing with which one strikes or kills”. The reduplication may add some iterative force to the meaning (“time and time again”). The root is in the zero-grade.

¹⁰⁹ Michael Weiss, *Outline of the Historical and Comparative Grammar of Latin* (2009), p.206.

kunza-/kunzi- HEG 637-8 “Hurrian appellative of unknown meaning. Perhaps a colour term in origin” *Hittite*

^{EZEN4}*kunzi-* “a party/festival” *Hittite*

kunzi- “holy symbol” –sometimes with Hurrian case form *-ta*. *Hittite*

^{siG}*kunzi-* “wool(?)” *Hittite*

kunziyala- adj. “pertaining to *k*., of *k*.” *Hittite*

kunziganahi(t)- “a purificatory substance” *Luwian*

Tischler (HEG) thinks that this group of words is likely to be of Hurrian origin because one form appears in a name referring to the Hurrian Goddess Hapat (Khepat) or her daughter, ^d*Kunzi-šalli/šelli*, and also because of Hurrian morphology being present in the case of *kunzita*. There is little reason to argue for a *ti*-stem.

kupiyati- HED 4:255-7 “Premeditation, scheme, plot” *Hittite*

Puhvel (HED) states that it this word has a Luwoid abstract suffix comparable to that in *ipalāti* “leftness, adversity” from *ipal(i)-* “left (hand)”. This word is possibly from the verbal root ***keup-** [LIV 359 (innerlich) beben]. It is spelt with a single [t] which may suggest that the sound in question was originally a ***d** or ***d^h** rather than a ***t**.

kupti- HED 4:259-30; HEG 638-40 “Cultic object of individual deities, struck or pounded into the ground.” *Hittite*

This term is particularly associated with Hurrian deities (Tešup and Hapat), so it is suspected to be of Hurrian origin. It is unclear whether we have /d/ or /t/ sound in the final consonant. We would certainly expect assibilation of a ***t** before an ***i** if this were inherited from PIE.

^{URUDU}*kuruzzi-* HEG 668; LIV 391-2 “A tool for cutting” *Hittite*

This word appears to belong to the verbal root ***k^uer-** [*LIV* 391-2 (ab)schneiden, schnitzen], which is also reflected with the Hittite verb *kuer*^{-zi} /*kur-* /*ku^uar-* “to cut (up), mutilate”. The root appears to be in the zero-grade, and we have an *-uzzi-* instrumental suffix. This word has the Sumerogram ^{URUDU} meaning “copper”.

kurzuna- HEG 668 “Noun of unknown meaning”

It was proposed based on the phrase *kur-zu-na-aš LUGAL-uš* that it meant something along the lines of “(king) of a war-waging land”. ***rs** occasionally shows assimilation to [rr] in Hittite, but there are cases where it remains [rs]. Less commonly, we find words with reconstructed ***rs** that show [rz]. Kimball (1999, p.352) thinks that this may often be a “Luvicisms”. There are other examples of doublets that show both (e.g. ^É*arzana-* and ^É*arsana-* “inn, hostel, brothel”), but these may be loanwords. Not enough is known about this word to say whether or not the [z] may reflect ***ti**.

^{GADA} *kušiti-* / ^{TÚG} *kušiši-* HEG 674-5 “Ceremonial garment of a king”

Hittite

Borrowed from Akkadian *kusītum* “garment, clothing”.

kutputi- HEG 681 “Black saltpeter”

This word is borrowed from Akkadian *kutpû* “black saltpeter”. Tischler (HEG) believes that it was loaned via Hurrian because of the *[-ti-]* suffix that is present.

kuwaluti- HEG 687-8 “Valuable, handcrafted (from gemstone) component of a cult object”

Hittite

Scholars have discussed this word at length (see HEG). Connections were made to *ku(wa)nann-* “copper” and *kuwaliu-* “blue”, and thus it was speculated that *kuwaluti-* meant “deposit of blue stone”. *ku(wa)nann-* is likely to be connected with Greek κύανος “dark-blue enamel, Lapis Lazuli, blue copper carbonate” and Mycenaean *ku-wa-no-*. *kuwaluti-* is spelled

with a single [t] which suggests it reflects, if the word is inherited, the sound ***d** or ***d^h**. There is a chance it has the Hurrian *-ti-* suffix found in words such as *kutputi-* (see above).

kuwayat(i)- HED 4:301-3; HEG 685-6 “Fear”

Hittite

kuwayati- appears to come from the Luwian verb *kuwaya-* “to be afraid”. According to Puhvel (HED) and LIV this apparently reflects the root ***d_{uej}-** [LIV 130 in Furcht geraten, erschrecken], and it is understood to be related to Homeric Greek δειδω “to be afraid (of), to fear”. I am aware of no other examples of the sequence ***d_u** becoming Luwian [kuw]. It is unclear exactly what stem this word has because the sign cuneiform 𐎶 represents [*tiš*], [*dīš*], [*táš*] and [*dáš*]. We could therefore have a ti-stem, a ta-stem, or a t-stem. The latter is the most likely, because it is doubtful whether true ti- and ta-stems exist in Anatolian, and because the *-att-* suffix forms common gender action/result nouns from verbal roots, which seems to correlate well with the fact that this word has a most likely verbal origin and the action noun semantics of “fear”.

^{GIS} *lahḫu(wa)rnuzzi-* HED 5:25-8; HIL 514 “Leafage, leafy branches, foliage, greenery” *Hittite*

Originally neuter, this word was increasingly used as a common gender noun in the plural. Kloekhorst (HIL) is sceptical as to whether this is a noun with the *-uzzi-* suffix because it does not express an instrument, nor is the stem *lahḫurn-* attested. Comparisons have been made to Hittite *lāḫu-/lahu-* “to pour” and to *lahḫura-* “bench”, although these are semantically very stretched (see HED). Connections that are stronger semantically are to Proto-Germanic ***laub-** from which we get the English word *leaf*. This word may reflect ***leh₂ub^h** as seen in HIL, ***leup-** as seen in Watkins (2011, p.51), or ***lo_ub^h** as seen in EDPG 328. Ultimately there are still major phonological problems with connecting *leaf* with *lahḫu(wa)rnuzzi-* (e.g. loss of labial stop), so this is highly speculative. It has also been suggested that Armenian *laxur* “celery, parsley” reflects a loan from Anatolian (HED). Puhvel (HED) proposes that the word might be a compound of *lahḫur* and *nuzzi* (the latter being derived as a ti-stem from a root **?1.*ne_ud-** [LIV 456 nutzen]. Unfortunately this would

be the only attestation of the word *nuzzi-*, and the only attestation of its verbal root outside of Germanic and Baltic.

lahhanza(na)- HED 5:8-9; HIL 511; Katz (2004); LIV 572-3 “Duck, water bird” *Hittite*

Joshua Katz (2004) takes up the idea that this word reflects the root **(s)neh₂-* [LIV 572-3 *baden, schwimmen*]. Anatolian does not preserve any examples of the initial PIE cluster **sn* (see, for example, Melchert 1994, p.111), a cluster which is common enough in other PIE branches (e.g. **snig^{uh}-* “snow”). This has led some scholars to believe that some phonological change has obscured this initial cluster. Katz proposes that **sn* in this case developed to [l]. This is similar to the more accepted change of **Hn* > [l] (cf. *lāman* “name” from **h₁neh₃mṇ-* –Greek *ὄνομα*, Latin *nōmen*, Vedic *nāma*, Gothic *nama*). Kloekhorst (HIL) favours an etymology of *1.*leh₂-* “to cry out aloud” [LIV 400-1 *bellēn*], which would supposedly mean “the quacking one”. Kloekhorst dislikes Katz’ etymology because he thinks that the phonetic development of **neh₂-* to *lahh-* is unlikely. In Katz’ defence, he makes it abundantly clear that the s-mobile must be present, which means that in his argument **sneh₂-* becomes *lahh-*, whereas **neh₂-* does not. With respect to the derivational morphology, Katz and Kloekhorst both reconstruct **-nt-i-on-*. **i* may reflect in reality the so-called *Motionssuffix* in **-ih₂-* which derived animate nouns from adjectives –this would suggest that the **-nt-* suffix in this case was used to derive a verbal adjective from a verb. The next set of elements are explained in two ways: (1) the **-o-* comes from the noun being derived as a thematic adjective, and is derived again as a noun with an individualising **-on-* noun suffix; (2) the noun in **-nt-i(h₂)-* becomes an adjective with the denominal possessive-adjective “Hoffman” suffix in **-h₁on-* (or **-h₃on-*). The abstract nature of the assumed underlying noun makes the second option less likely in my opinion, although Latin *iuvenis* “having life-force (i.e. being young)” from **h₂iu-h₁n-* is an easy counter to the argument that the noun must be concrete. Intervocalic **h₁* and **h₃* would also be lost in Anatolian, which makes the second option phonetically possible. Semantically speaking the first option is more attractive as it assumes the presence of the suffix **-on-* which was productively used in Indo-European

languages to form individualized nouns (cf. Latin *Catō* “the sharp one” from *catus* “sharp”). Likewise, recreating the possessive force in option two is a strain.

lazzi- HED 5:68-74; HIL 522 “Good, right” *Hittite*

lazzai-/lazi- “Sweet Flag, *Calamus* (plant)” *Hittite*

Kloekhorst (HIL) suggests the etymology of **lāt-i-*. Hieroglyphic Luwian has a possible cognate with *lada-* “to prosper” which implies that the **t* must have undergone lenition to /d/ in Luwian. The word for the plant is equated with Sumerian *GI.DÙG.GA* and Akkadian *qanū ṭābu* (“good reed”). It is possible that the Hittite word is a calque directly from Akkadian with the meaning “good (reed)”. I am not aware of any cognates outside of Anatolian. The long *ā* seems to suggest laryngeal lengthening. Because the Luwian vowel in the root is always short (i.e. no plene spelling present) and the Hittite appears to be long or accented (*la-az-zi*, or *la-a-az-zi-at-ta* in the case of the derived verb *lāzziye^a-zi* “to set straight, to prosper, to be good”), it seems unnecessary to reconstruct a long vowel, which could easily have arisen from an accented **ō* in an open syllable in Hittite. This is probably not a *ti*-stem, but an *i*-stem built on a *t*-final root.

laz(z)andati- HED 5:74 Probably a name. Meaning unknown *Hittite*

This is only attested twice in a single ritual context that is associated with the Goddess *Huwaššan(n)a* (KBo 24.26 iii .): *h]āwēš Lazzandatin ḫašta [...Laz]zandatiš^D Ayindupinzu ḫašta*. “Sheep (?) (nom.pl?) bore/begat (3.sg.past) L. (acc.sg)...L.(nom.sg.) begat (3.sg) *Ayindupinzu* (a divine being).”). In Hittite the word for “sheep” is always written with the Sumerogram *UDU*, so it is unclear whether we really have the word for sheep with *h]āwēš*. If so, this would be the only phonetic attestation of the word. *ḫašta* is also a 3.sg.past verb, which would create agreement problems if we are to accept *h]āwēš* as the nominative plural of *sheep*. Luwian attests the word for sheep with *ḫāyi-* (Cuneiform) and *ḫawi-* (Hieroglyphic). In addition to this, we have no other attestations of the name *Ayindupinzu* or the word in question, *laz(z)andati-*, which makes this sentence very hard to unpick. The CHD translates

this as “an animate being”. We cannot be totally sure what sound the [t] represents etymologically. The fact that we only see a single [t] seems to suggest that we may have a ***d** or ***d^h** at the source. [da] can represent voiceless /ta/ as well as /da/ which complicates matters somewhat. Puhvel (HED) seems to think this is probably a Luwian name given the Luwian context. Luwian, and Hittite, [z] can reflect ***tj** as well as ***t-s**. In Luwian a [z] can arise when an ***s** follows a sonorant, but in *lazz-* we can rule this out. Finally, in Luwian, [z] can stem from PIE ***k’**. The morphology of *-ndati* looks odd for an Anatolian noun, but considering that the Cuneiform Luwian 3.pl.middle.imperative verb ending *-andaru* (the cognate ending in Hittite is *-antaru*) is inherited from ***-ontor-**, we can probably assume that this morphology reflects ***-nto-** and phonetically represents /ntadi/. I think it is unlikely that this preserves the PA ***-ando** adverbial suffix (from PIE particles ***én** and ***dó** –see LIPP 2:152). I am not aware of adverbs ever being grammaticalized as nouns at any rate. There is only one Hittite word with a similar morphology to *laz(z)andati-*, and it is the word *lamarḫandatt(i)-* “hour-fixing” which itself is suspiciously Luwian (see HED 5:58). This is apparently a compound of Hittite *ḫandatt-* “trust, determination (?)” and *lammar* “hour”. Ultimately I know of no Anatolian lexeme which possesses the morphology of an nt-stem combined with a verbal noun in *-att-*, so it may be possible here that we have a compound or a non-Indo-European loan word. Perhaps it is an example of an early compound of *lazzi-* “good” and *ḫandatt-* “trust”. If the compound was sufficiently early and the [ḫ] in *ḫandatt-* reflects ***h₃**, we could possibly argue that the ***h₃** was lost intervocally (as is expected). The form would be ***lāti-h₃eH-nt-ot-** “one who has righteous trust/belief”. Note that LIV reconstructs the verb *ḫā-^{zi}/ḫ-* “to believe, trust, to be convinced” as ***h₂eh₃-** [LIV 258] and considers it likely that Latin *ōmen* belongs to this otherwise totally Anatolian root. ***h₂** was not lost intervocally in Hittite; so, if LIV is correct, there would be a major flaw in this analysis.

^(GIŠ) *liti-/leti-* HED 5:98-9 “Mediterranean oily fruit tree, possibly almond” *Hittite*

From the Sumerogram ^{GIŠ} “wood, plant” and from the contexts in which it appears, we can guess this word refers to some type of plant. This word is always written with a single [t]

which suggests it reflects a PIE ***d** or ***d^h**, assuming of course that it is inherited. I know of no cognate words.

lumpašti-/lup(p)ašti- HED 5:118-9; LIV 420 ? "Pain, grievance, chagrin"

Hittite

This word is interesting in that it is formed with the Hittite (and perhaps Luwian) *-asti-* suffix, which is usually used to form common gender abstract nouns from adjectival bases. In many ways this is one of the stronger examples of a suffix that may continue a *ti*-stem, and one of the few times where an apparent *ti*-stem actually has an abstract flavour to it, much like it does in the late PIE languages. Rieken (1999, p.182) argues that this is a complex suffix built off an *s*-stem (i.e. ***-osti-** < ***-os-ti-**) and that it is also preserved in the Polish word *długość* (from Proto-Slavic ***dǫlgostь**, which in turn comes from PIE ***dǵh₁g^h-os-ti-**). See my earlier discussion of Hittite *dalugašti-*. *Lumpašti-* tends to have gloss-wedges which hint at a Luwian origin. *lumpašti-* possibly comes from the root ***leup-** [LIV 420 (ab)schälen] meaning "to skin, peel, shell". Comparisons have been drawn also to Greek λῦπη "pain of body or mind, grief", and Sanskrit *lu-m-pāti*, *lupyáte* "break, tear, rip to pieces", although the latter is probably better connected to ***reup-** from which we also get Latin *rumpō*, *rumpere* "to break, burst, tear" (see EWA 2:482 and LIV 510-1) and English words such as *reave*, *rover*, *rob*, *robe*, *bereave* (Watkins, 2011, p.74). *S*-stems are a very old class, in the sense that they exist in Anatolian as well as the late PIE languages. They are frequently deverbal (although not always abstract), although there are numerous cases where they are built directly onto adjectival roots (e.g. ***pleth₂-os-** "breadth, width"). Other times *s*-stems can be built onto a root with an unknown category (e.g. ***néb^h-os-** "cloud" > Hittite *nēpis*, Greek νέφος). The issue here is deciding what role the ***-os-** suffix has in the meaning of the word, and what role the ***-ti-** part of the suffix has. If we are right to connect this to a verbal root such as ***leup-**, then it would be likely that ***-os-** first created a verbal (event) noun (e.g. *the skinning*, *the peeling*, *the shelling*). The only other possible examples of the ***-ti-** suffix being used are when it is used to form instrumental nouns in *-uzzi-*, the instrumental case, and instrument/manner adverbs (three different, but possibly related, functions. Where this

lumpašti- appears in Hittite, it certainly appears to be an entity in its own right. It is sometimes the object (accusative) of the Sumerogram verb DÙ “make” (reflecting Hittite *iya-*) or “become” (reflecting Hittite *kiš-*). We should probably assume *iya-* is the verb here, because *kiš-* is a middle verb and never takes the 1st person singular ending in *-mi* which is supplied in the texts (*iya-* does take this ending), and because we would not expect the accusative ending with a copular verb such as *kiš-*. When *lumpašti-* is in the nominative, it is locatable (e.g. in a deity’s soul). Based off this analysis I wonder whether the addition of an ablative/instrumental **-ti-* is used here to create agency (and/or animacy) from an event/action noun which by necessity cannot have agency. The obvious shortcoming is that words like *dalugašti-* “length” or *palḥašti-* “width, breadth, expanse” do not fit so neatly into the analysis, partly because words like “width” do not seem to have much in the way of agency, and partly because there is nothing inherently obvious to motivate the addition of the **-os-* suffix, unless this suffix is taking an appurtenance adjective function (note that *-ašša/i-* in Hittite normally formed adjectives from nouns). It might be incorrect to say that the *-ašti-* suffix was used to derive nouns from adjectives, as the corresponding adjectives tend not to agree morphologically: *dalugašti-* “length” and its i-stem adjective counterpart, *dalugi-* “long”; *pargašti-* “height” and its u-stem adjective counterpart, *parku-* “high”; *palḥašti-* “width” and its i-stem adjective counterpart, *palḥi-* “wide”. It is important to ascertain whether the roots are adjectival or verbal, despite generally being treated as the former. *palḥ-* is usually reconstructed, for example, as **plh₂-* (see HIL 620-1) which corresponds phonologically with the verbal root meaning “to approach, come nearer” (**pelh₂-*) [LIV 470-1 sich nähern]. *park-* is connected fairly securely to the verbal root **b^herg^h-* [LIV 78-9 hoch werden, sich erheben] (See HIL 636-7), albeit also in the zero-grade. Perhaps words with the *-ašti-* suffix reflect a nominalisation of a verbal adjective (in *-aš-*). It is important to note that in Hittite the *-att-* suffix (<**-et-/ot-/t-*) is used to build nouns from verbal or adjectival bases. In this way it is possible that Anatolian formed the suffix *-ašti-* from PIE **-os-t-*. In addition to this, it may have the *Motionssuffix* in **-ih₂-* (i.e. **-os-t-ih₂-*). This suffix was mainly used in the early stages of PIE as an abstract suffix (Rieken 1999, p.239). All of these

–*ašti-* forms in Hittite (and Luwian) are abstract nouns, which may support the idea that this suffix is present.

lukkatt- HED 5:108-11; HIL 533; LIV 418-9 “Daylight, daybreak, dawn, morning” *Hittite*

From the root ***leuk-** [LIV 418-9 hell werden]. This is a t-stem (Hittite *-att-*).

lulut- HED 5:115-7 “Evenness, steadiness, stability, security” *Hittite*

Because of the Hittite word *lulu-* “evenness, steadiness” and the existence of a very Luwian looking *laluti* (dat./loc.) as well as the presence of glossed wedges, it is assumed that *lulut-* is a t-stem Luwian variant of the Hittite *lulu-*.

luzzi- HED 5:130-1; HIL 536; LIV 399 “Forced service, public duty, corvée” *Hittite*

It has often been assumed that this word is cognate with Greek λύσις “loosing, releasing”, a ti-stem of ***leuH-** [LIV 417 abschneiden, lösen]. Kloekhorst (HIL) rightly doubts this analysis on the grounds of there being virtually no other example of a ***-ti-** suffix being used in this way. Instead he suggests it is an *-uzzi-* suffix attached directly to the zero-grade of the root ***leh₁-** [LIV 399 nachlassen, (zu)lassen] meaning “to ease off, allow, leave, permit”. The assumed meaning would therefore be something like “that [work] which releases one from his or her obligations”.

malatt(i)- HED 6:28; LIV 432-3 “Sledgehammer, bludgeon, cudgel, club, mace”

Hittite

This appears to be formed from the verbal root ***melh₂-** for which we find many Indo-European reflexes [LIV 432-3 zerreiben, mahlen], and consequently it is likely related to Hittite *malli-* “he/she it grinds”, and Cuneiform Luwian *mammalmāi* “he/she/it should break/crush”. It appears to be a t-stem which would suggest this is a common gender action/result noun. Contrary to the usual function of Hittite *-att-* the word seems to have an instrumental meaning, i.e. “the thing with which you grind/pulverize” and hence the name for

a weapon, although we probably cannot assume that it always referred to a weapon (cf. English *hammer* which can be a weapon or tool). According to Puhvel (HED) various IE mythologies have thunder gods who are noted as having sledgehammers or clubs which have names etymologically related to the above mentioned verbal root (e.g. Thor with *Mjöllnir*, the Latvian Pērķōns with his *milna*). It would be easier to explain semantically if we assumed there was an **-ih₂-* motion suffix attached to the suffix in **-ot-*. We cannot be sure whether this suffix is present because we only ever see the word declined as an instrumental singular (ending in *-it*). An alternative to accepting a slightly awkward interpretation (because of the morphology) could be to take this noun as a result noun. This means it would be the “thing that has been ground” rather than “the thing that grinds”. This could reflect pre-steel tool production where a stone tool was shaped by abrasion rather than by cutting’.

māk(kiz)zi(ya)- / mazki- HED 6:18-9; HIL 544 “A washing place royalty would visit before a ritual.”

Puhvel (HED) connects with Greek verb *μεγαίρω* “regard as too great, grudge, envy” and Latin *mactō* “to sacrifice, honour, magnify, destroy”. The Latin verb is clearly derived from the noun *mactus* “glorified, worshipped, honoured, adored”. Contrary to Puhvel’s argument, the Greek verb is apparently unconnected to the noun *μέγαρον* “large room, hall, women’s apartment, bedchamber, house, palace, sanctuary, shrine, and tomb”, which is instead considered to be a technical loan word (GEW 2: 189). Kloekhorst (HIL) argues that the Hittite word is a loanword.

makalti, magalzi, makanti HED 6:16-7 ”(Eating) bowl(ful)” *Hittite*

Puhvel (HED) argues that this is a Hurrian-mediated Akkadian loan word. It ultimately comes from Akkadian *mākaltu* “(wooden) eating bowl”.

mannitti- HED 6:58-9; HIL 540-2 “A Deity (growth?)” *Hittite*

mayantili “mightily” *Hittite* [-ili adverb built on nt-stem]

Puhvel (HED) argues that this is Luwian in origin. He connects the word with the Hittite verb *mai-/miya-* “to grow, increase, thrive, mature, ripen, reach term, be born” (< **2.*meiH-**) [LIV 428 *heranreifen, gedeihen*]. Puhvel suggests *mannitti-* was inherited from a hypothetical Luwian **ma(y)anni(ya)tt-i-* (from a verb **mayanni(ya)-*), and sees a pattern between it and Hittite abstract *miyatar* “growth, increase”, which mirrors the pair Luwian *šalhitti-/šalh(i)anti-* and Hittite *šallatar* “greatness, largesse”. The sole basis for suggesting a hypothetical Hittite **mayanni(ya)-* is the relationship between Luwian *kalutanni(ya)-* and Hittite *kaluti(ya)-*. Kloekhorst (HIL) has an entirely different etymology which avoids much of the complication. He reconstructs a zero-grade root ***mh₂-** which he connects to Old Irish *már, mór* “big”, and Middle Welsh *mawr* “big” from Proto-Celtic ***māros**. He also connects this to the Germanic family: Gothic *maiza* “more”, OHG *mēro* “ibid.”. Kloekhorst assumes a suffix ***-oi₂-/-i-** is attached to the Anatolian form. If *mannitti-* does reflect an earlier **ma(y)anni(ya)tt-i-*, we would have to explain the double [nn]. [nn] can arise from an ***n** directly before an accented syllable (e.g. ***-enó-** suffix becomes *-anna-*), or from some kind of assimilation (e.g. ***h₂n** > [nn]). This could best be done by suggesting the [nn] is assimilated form of ***-tn-** (the zero-grade suffix of *-ātar*, a heteroclitic r/n-stem used to create abstract/action nouns from verbs, adjectives, and nouns). The form would roughly be ***mh₂-oi₂-otn-**. Presumably this was turned into a verb with the addition of an *-iya-* suffix, and then back to an abstract with *-att-*, after which it was finally given a motion suffix in ***-ih₂-**. We would have to assume a form such as this: ***mh₂-oi₂-otn-i₂o-t-ih₂-**. That there are five derivational suffixes in a row seems fairly exceptional, although there are certainly many cases in English (particularly Greek or Italic loanwords) with equal or more derivational suffixes.

manziti(ya?)- HED 6:61 “Padded glove, potholder (*vel sim.*)”

Hittite

Puhvel (HED) assumes this is of Hurrian extraction because of its ritual context, although he notes that it occurs with a Luwian word as well. There is no known etymology and, if

inherited, it is difficult to pull apart the morphology. The sequence [ti] possibly reflects **d^(h)i* and the [nzi] could reflect a number of things (**ntTi*, **ntsi*, **nti*, and possibly **nsi*).

^{TÚG} *mazakanni*- HED 6:108 “A fancy jacket”

Hittite

Puhvel (HED) suggests this is a loanword -perhaps Hurrian-Mitannian.

mit(t)a-, *miti*- HED 6:165-7; HIL 583 “Red, red wool (with SÍG ‘wool’)”

Hittite

^{SÍG} *mitai*- “to treat ritually with red wool”

Phonetically it has been assumed that we have a /t/ (if inherited, a **t*) due to the [tt] in *mitta*-. Because Hittite does not preserve a **t* before an **i*, it must be a loanword. Puhvel (HED) says that it is probably Luwian because of the i-stem and lack of assibilation. We cannot rule out other sources, and Puhvel suggests it could be a Mediterranean colour term (cf. Mycenaean *mi-to-we-sa*-, Greek *μίλτος* “red earth, red ochre, ruddle”, Latin *minium* “red ochre”) with unusual consonant variation (l : n).

mišti- HED 6:15-6, 165; LIV 429 “Glance ? Ray/beam of light”

maišt- “shaft (of light), ray, beam, gleam”

mištili(ya)- ? “pertaining to (evening) glow, twilight related, of evening” [this contains the appurtenance adjective suffix *-ili*-]

Hittite

This possibly comes from the verbal root **meis*- [LIV 429 die Augen aufschlagen], although this root is only attested in Vedic otherwise. The form *maišt*- points to a t-stem in Hittite. The form *mišti*-, because of gloss-wedges and a motion suffix in *-i*-, points strongly to a Luwian origin. The difference in root vowels suggests the root was ablauting (o-grade in Hittite and zero-grade in Luwian) to some degree. We do not need to assume that *mištili(ya)*- is Luwian despite the similarities shared with *mišti*-. All forms point towards a t-stem originally, so we do not need to assume that *mišti*- or *mištili(ya)*- have inherited a **-ti*- suffix.

^{NINDA} *mulati*- HED 6:186-7 “Small bread (^{NINDA}) product (half a handful of flour)”

Hittite

Because this word occurs mostly in Hurrian rituals, and because it has not become fully grammatically integrated, Puhvel (HED) assumes this is most likely a Hurrian loanword.

mūtamuti- HED 6:195-6; HIL 588-9 "Pig(let)" *Hittite*

mutamuti- ? (Hapax. Meaning unclear) *Cuneiform Luwian*

mūdāmūdālit- ? (Hapax. Meaning unclear) *Cuneiform Luwian*

mūdan- 'pig-food' *Hittite*

The Hittite word here is quite possibly connected to the Hittite verb *mūtae-^{zi}* "to root, to dig in (the ground); to remove (evils); to neglect". The noun is obviously reduplicated which may help get across iterative force. Oettinger proposed the root **meuḫ₁-* "to move" (see HIL; this root is listed as **mieḫ₁-* in LIV [LIV 445-6 (sich) bewegen]), but that would suggest that the noun or adjective, from which the verb was derived, was **m(i)euḫ₁-to-*. Unfortunately there is little to no evidence at all of Hittite building verbal adjectives with the **-to-* suffix. Likewise, the semantics of "move" are a little removed from those of "dig" –although I would not necessarily rule out the shift as being impossible. The single [t] in the Hittite and Luwian forms indicates an original **d^(h)*, so we can rule out a ti-stem at any rate. There is a root **meud-* [LIV 443 in Freude geraten], but this is semantically even more problematic.

^{NINDA} *naḫ(h)iti-* HED 7:13-5 "A bakery product. Sourdough from Nahita" *Hittite*

This is probably toponymic, named after the Hittite city *Nahita* located in what is now modern day South Central Turkey. The word is always attested with a single [t], which suggests this is an inherited **d^(h)* or the word is a loanword.

naḫsi-, naḫzi- HED 7:15-7; HIL 593 "A measurement of capacity or weight" *Hittite*

The alternation between [s] and [z] points to a foreign origin. Because the word has close connections with the old kingdom of *Kizzuwatna* (located in modern day South Eastern

Turkey), Puhvel (HED) assumes the word has a Hurrian provenance. Kloekhorst (HIL) does not make any guess as to the origin, although he does agree that it is foreign.

nana(n)kalti- HED 7:59-60; See HED 4:30-1; HEG 470 for discussion of *kalti-* "With matching pot (?)” –Qualifies the word “wagon”. *Hittite*

See the entry for ^{DUG}*galdi-/kalti-* earlier, which has an origin stemming from the Sumerograms GAL “cup, beaker” and DI “good” (i.e. “good cup”). These two Sumerograms would have represented the Hittite phrase *āssu zēri*, and after a while were apparently loaned straight into Hittite with the sound values of the Sumerograms. We would have to conclude that this is not a ti-stem. The element *nana(n)-* is not well explained, although Puhvel (HED) thinks it may be the same as *nana-* “brother, sibling” (e.g. wagon with a brother-bucket > double seated wagon).

^(GIS) *nata-* HED 7:64-8 “Reed” *Hittite*

nata-, nati- “reed” *Luwian*

natatt- “reed(?)” *Hittite*

This word appears to be a regular a-stem (PIE o-stem) in Hittite, although it has been given an –att- common gender action/result noun suffix to form *natatt-*. This seems to contradict Hoffner and Melchert’s statement that this was a deadjectival and deverbal suffix (GHL p.57), unless of course *natatt-* is not derived from the noun *nata-*. The Luwian form has both the thematic [a] and the fairly common variant in [i]. There seems to be no compelling reason at any rate to label this a ti-stem, or even an i-stem. The etymology is complex (see HED for a good discussion). Puhvel (HED) seems to favour the idea that the word is an Indo-Aryan loanword –probably from Mitannian via Luwian –mainly because of strong connection between Hittite adjective *naduwant-* “reedy” and Sanskrit *naḍvánt-* “reedy, covered with reeds”. Etymologically the Luwian and Hittite [t] represents a ***d**^(h). The retroflex [ḍ] in Sanskrit on the other hand is somewhat problematic (sometimes represented as [ḷ]), as

retroflexion in Sanskrit usually occurs according to the RUKI rule (after r, u, k, and i certain consonants are made retroflex), or in certain assimilatory contexts (**ni-sd-o-* > *nīdā-* “nest” (*ni* is “down” and **sd* comes from the root **sed-* “to sit, set yourself”) which usually end up with the deletion of the consonant causing the retroflexion and subsequently with the compensatory lengthening of a vowel preceding that deleted consonant.

nathī- HED 7:71-3 “Bed(ding)” *Hittite*

nathī- seems to refer to a ceremonial bed laid out in the inner sancta of shrines, although it could also refer to a more general bed. Because the oblique cases tend to have the form *nathita-* it is assumed that this is Hurro-Luwoid (Cuneiform Luwian *nathit-* which is borrowed from Hurrian *nathī* “bed”).

nuputi- HED 7:130 “Ingredient in making red glass” *Hittite*

Has been alternatively read as *kuputi-* (See HED) and connected to Akkadian *kutpū* “black frit”. This is a hapax, so unfortunately this problem is unlikely to be resolved any time soon.

nurati- HED 7:131 “Pomegranate”

This translation is suggested because of the words similarity to Hurrian *nuranti* “pomegranate” and because the passages in which the word occurs are strongly influenced by Hurrian.

padummazzi HED 8:207-8; LIPP 2:627 “At the feet, below, beneath, under” (adv.) *Hittite*

George Dunkel (LIPP) reconstructs this as **pod-ṃmo-tjo*. Puhvel (HED) takes this from the same root **pod-* “foot”, and he suggests it has the appurtenance suffix found in words such as *kuenzumna-* which is usually reconstructed as **-h₂uēn-/-h₂un-*. According to Puhvel we would have a form somewhat like this: **pod-h₂un-o-tjo*. [um] in Hittite can result from dissimilation of **uṽ* and **uṽu*. It would have been essential, however, for Siever’s Law (after a heavy syllable post-consonantal **uṽ* and **iṽ* become **uṽu* and **iṽi* before a vowel) or

Lindeman's Law (post-consonantally in initial syllables ***u** and ***i** become ***uu** and ***ii** before a vowel) to have been in place for this happen. Kimball (1999, pp.323, 376-7) thinks the "ethnic-gentilic" *-umna-* suffix could not have undergone dissimilation or Siever's Law in the first place, preferring a reconstruction of ***-u-mon-/-u-mn-** which agrees with NIL 530. Generally, syllabic ***m** becomes [am] in Hittite, although there are instances where it may become [um]. If this is such an instant, we could probably accept Dunkel's reconstruction with only a slight modification: ***pod-mno-tjo** (note the assimilation of ***n** > ***m**). A morpheme ***mmo** seems unlikely and unprecedented to me. This solution also makes the derivation stage of a separate u-stem unnecessary. This is attractive because there is no evidence for a u-stem of the root ***pod-**, except for the Vedic hapax *pādú-* "shoe/foot(?)" (RV 10.27.24). *pādú-* is highly problematic. It is referring to some aspect or feature of the sun being revealed, but it seems to be metaphorical. Here Stephanie W. Jamison and Joel P. Brereton's 2014 translation of the Rig Veda passage:

This is your means of life. And know this—don't hide away such a thing in the
clash—when the sun reveals itself, it hides the mist [?] . Its "foot" is released as if
from a garment. (RV 10.27.24)

There was a PIE superlative suffix ***-mmo-** which is attested in Italic and Celtic (and possibly Germanic and Indo-Iranian) which mostly created superlatives off adverbial bases (see Weiss 2009, p.357), but I do not think there is any reason to reconstruct a suffix that otherwise does not appear in Anatolian and that is semantically strained ("foot-most"). The final suffix could be adverbial ***-tjo** or adverbial ***ti**, although Dunkel picks the former over the latter.

^{LÚ} *pahhurzi- pahhu(wa)rši-* HED 8:26-7; HIL 613-4 ?; NIL 540-5 ? "Extra-marital offspring,
illegitimate progeny, natural son, bastard; (n.?) illegitimacy" *Hittite*

The fluctuation between [š] and [z] here points most likely to a foreign origin, although from where that might be is unclear. However, Puhvel (HED) suggests a possible connection to Hittite *pahhur/pahhyen-* "fire", which is etymologically linked with English *fire*, as well as

Greek *πῦρ* “fire”, Armenian *hur* “fire”, and Old Prussian *panno* “fire” (all appear to come from a heteroclitic r/n-stem ***peh₂-ur/-uen-**). Puhvel believes the form reflects a syncopated “Luwoid” form *pahḫuwar-ašši-* (note the appurtenance suffix in *-ašši-* which is often connected to Luwian). This would suggest a literal meaning of “fiery”. Puhvel compares this relationship to words such as Avestan *x^varənah-* claiming it to mean “regal effulgence” and “ejaculate”. *x^varənah-* has been fairly well discussed (see Alexander Lubotsky’s paper *Avestan xvarənah-: the etymology and concept*¹¹⁰) and the etymology points towards a root ***pleh₁-** (***pelh₁-** in Indo-Iranian) “to fill” [*LIV* 482-3 *sich füllen, voll werden*) with an IE ***-ne¹⁰s-** ‘property’ suffix (formed nouns generally relating to exchange and commerce), and is considered directly cognate with Sanskrit *pārīṇas-* with exact agreement in gender, nominal morphology, and morpheme gradation. Lubotsky argues that the meaning was originally “sovereignty” or “control” followed by “abundance”. In short, *x^varənah-* has etymologically nothing to do with the “sun” (“solarity” as Puhvel puts it) or “fire”. Puhvel continues his argument with some mythological parallels of kingly or divine figures being born or conceived from flames (e.g. Servius Tullius and some versions of Dionysus’ birth). I am not entirely convinced by Puhvel’s argument, although I acknowledge at this time we lack a better alternative. There is certainly a strong phonetic similarity between this word and the word for “fire”.

pallantiya- HED 8:63 “Wanness, emaciation”

Hittite

Puhvel (HED) suggests a root ***peln-** from which we get Latin *palleō* “to be pale”, and Greek *πολιός* “grey (hair)”. Frisk (GEW) and De Vaan (EDL) both make no mention of these two examples being related. The Latin [a] does not agree with the Greek [o]. De Vaan seems to think *palleō* is a loanword with a proto-form ***paluo-**, not ***palno-** although the change from ***ln** > Latin [ll] is possible. *πολιός* probably reflects ***poliwo-** or ***polijo-**. In Hittite, [ll]

¹¹⁰ Alexander S. Lubotsky, *Avestan xvarənah-: the etymology and concept*. Originally appeared in *Sprache und Kultur. Akten der X. Fachtagung der Indogermanischen Gesellschaft* Innsbruck, 22.-28. September 1996, ed. W. Meid, Innsbruck (IBS) 1998, 479-488. Accessed online from <https://openaccess.leidenuniv.nl/handle/1887/2685>.

resulted in most cases by way of assimilation, either with the combination of ***ln** or ***IH** (perhaps not with ***h₃** though. See, for example, *walh-* “to strike” < ***uelh₃-**). The [a] in Hittite could reflect either an ***o**, or an ***a**, or perhaps a syllabic ***l̥**. Presumably this is a *-iya-* adjective built on an nt-stem.

palhašti-

HED 8:64-8; HIL 620-1 “Width, breadth, expanse”

Hittite

This word is cognate with Latin *plānus* “flat, smooth”, Lithuanian *plónas* “thin, flat”. These are fairly securely connected to the root ***pelh₂-**. Kloekhorst (HIL) argues that the root must have been zero-grade, because an e-grade would have regularly yielded ****palli-** (as a zero-grade we would reconstruct the word as ***pl̥h₂-osti-**). For a discussion of the *-ašti-* suffix see my entries for *lumpašti-/lup(p)ašti-* and *dalugašti-*. The main question is how this suffix was formed. Is it possible that there was originally a noun ***palhaš-** standing beside the adjective *pal̥hi-* “wide, broad” which we could expect (being an s-stem) to have been deverbal. The idea presented in my entry for *lumpašti-/lup(p)ašti-* that we have an s-stem built to a verbal root, which in turn has been transformed into a t-stem. This is finally given an ***-ih₂-** abstract noun suffix (i.e. ***pl̥h₂-os-t-ih₂-**).

^(GIŠ) *palzašha-/ palzah(h)a-*
plinth, socle”

HED 8:82-4; HIL 623-4 “Base, stand, platform, pedestal, slab,

Hittite

These two words may in fact reflect variant spellings of a single word. Puhvel (HED) interprets the Hittite word phonetically as /paltsha/ and he believes it is a deverbal noun from ***pelt-**, ***plet(A₁)-** or ***pl̥t(A₁)-** (equivalent to ***pleth₂-**) [*LIV* 486-7 breit werden, sich ausbreiten]. The *-(a)šha-* suffix forms common gender action/result nouns from verbs. The *-(a)šha-* suffix should probably reflect ***-(o)s-h₂o-** which may or may not be of Luwian origin. This suffix would assume a hypothetical s-stem ****palzaš-** which would be directly comparable (except for the different ablaut) with Vedic s-stem *práthas-* “breadth, extent”. The ***-e^os-** suffix would have been made a zero-grade by the re-derivation with the individuating/animating ***-eh₂-** suffix –in turn put in the zero-grade when the theme suffix

was added. This is probably another small piece of evidence that Anatolian was forming s-stem abstract measurement nouns from roots. It is very unlikely that the [z] has originated from assibilation of a *t, so I think it is safe to rule it out as a ti-stem.

panzakitti- HED 8:95 “(Spindle-)whorl, flywheel”

Hittite

The first element in the following term *panzawartanna-* reflects early Indo-Aryan ***panca-** from PIE ***penk^u-o-** “five”. It is unclear whether the initial *panza-* element in *panzakitti-* reflects the same *panza-*, as it may just be a coincidence. The second element has double [tt] which is unlikely to have been preserved in an inherited Hittite word before an [i], suggesting that this is a loanword. If the word was of Indo-Aryan origin, however, we would not expect to see a [k] before an [i] because in such conditions it would have been palatalized (as the ***k^u** was in *pañca-*). *Panzakitti-* is spelled with a single [k] which if anything reflects ***g^(u)**-this should still be palatalized in Indo-Aryan before an *i.

panzawartanna- HED 8:96 “Five-laps (*lit.* five-turns)”

Hittite

panzawartanna reflects early Indo-Aryan ***panca-** from PIE ***penk^u-o-** “five” and *vart-* from ***vert-** [LIV 691-2 sich umdrehen]. The double [nn] may be present due to the accent in the previous syllable. This is one fairly uncontroversial example of a Mitanni-Aryan loanword.

pargašti- HED 8:127-33; HIL 636-7; LIV 78-9 “Height”

Hittite

This word comes from the root ***b^herg^h**- [LIV 78-9 hoch werden, sich erheben], from which we find the modern German word *berg* “mountain”. This has the same suffix as we find on *dalugašti-*, *palḡašti-*, and *lumpašti-*, which I have discussed earlier. This presumably has its origin as an ***-e⁰s-** suffix, although the specifics are far from clear. There is an example of a t-stem directly following an s-stem in Hittite: *saudišt-/sāḡitišt-* “weanling” (HIL 739-40) from ***so(m)-uētes-t-** (*lit.* “(cow/sheep having) one-year”). We might also include *ḡurpašta(n)-* “leaf, peel” from a possible *(**H_{2/3}**)**u(e)rb^(h)-os-t-o(n)-**, and *alkišta(n)-* “bough, branch”. Related to this is another word *hatt-alk-ešna-* “thorn-bush” whose first element presumably

reflects the same root as *hatt*-^{a(ri)} “to pierce, to prick, to stab”. There is no sure etymology for these two words, although Puhvel (HED 1:35-6) does discuss a few options. In any case, *alkišta(n)*- and *hattalkešna*- both point to an original **-es-* suffix to which various morphemes are attached. I am reluctant to suggest that the *-ta(n)*- element reflects a **-to-* suffix because there is little evidence supporting the existence of this suffix in Anatolian. Based off this analysis, I would probably have to conclude that stems in *-ašti*- reflect the Indo-European suffix complex **-e^{/o}s-t-ih₂-* rather than **-e^{/o}s-ti-*.

parza / *parzša* HED 8:179-80; LIPP 2:608 “Through, backwards, in reverse, withershins (ablative)
Hittite

Dunkel (LIPP) reconstructs this word as **pér-ti* which may have a cognate in Pamphylian Greek *περτ(ι)*, but more certainly with Oscan and Umbrian *pert*. It is assumed that the **e* was lowered before **rC* (see Kimball, 1999, pp.161-3) which is a very common sound change (cf. the *(uni)versity/varsity* rule in English). This is the **-ti* adverb suffix.

parzašša- HED 8:180-1 “Meaning is obscure. It may be some kind of weapon or tool, or a material.”
Hittite

The meaning is obscure and the word is possibly Luwian in origin. This appears to have the denominal adjective appurtenance suffix in *-ašša/i-*, although there are examples where these adjectives become nouns (see GHL 56). [z], occurring after an [r], is often suspect to me. If Luwian, this word may have a [z] as a regular outcome of an **s* following a sonorant (in this case **r*). It is also possible that the [z] reflects a **k*’ (if Luwian) or a PA **ts* < PIE **tj* or **T(s)T*. The first [a] could reflect an **o*, an **e*, or a syllabic **r*. Without a better understanding of the word’s meaning, we are prevented from reconstructing it any further.

^{LÚ} *patili*- HED 8:206-7 “Male officiator(s) in cathartic, maieutic, and mortuary rituals” Hittite

Because this word is absent in Old Hittite, because it is associated with persons and groups of Hurrian and Luwian origin, and because of irregularities in inflection, Puhvel (HED) argues

that this word is of Luwian or Hurrian origin. In any case, it is always spelled with a single [t] pointing at an original ***d^(h)** if inherited. There is a suffix *-ili-* in Hittite, but it forms adjectives. That is not to say that this could not be the same suffix and that the word is a substantivisation of an earlier adjective.

^{GIŠ} *patiyalli-* HED 8:205-6 “Post, leg, foot (of bed, chair, tripod etc.)” *Hittite*

This appears to be from the root ***ped-** “foot”. The single [t] reflects a ***d** and as such we have no reason to reconstruct a ti-stem.

pitteyali- HED 9:107; HIL 655-8; LIV 477-8 “Swift” *Hittite*

^{LÚ} *pittiyant-* “fugitive”

These words are related to the Hittite verb *pittai-*, *pattiya-* “run, fly” which, according to Kloekhorst (HIL), is from the PIE root ***peth₁-** [LIV 477-8 fallen]. To this root Kloekhorst reconstructs an ablauting ***-i-/-oi-** suffix. There is no need to reconstruct a ti-stem here as the [t] that is present belongs to the root, not the suffix.

puti- HED 9:145-6 “Lump, piece” *Hittite*

Puti- has no etymology that I am aware of. There is always a single [t] which suggests a ***d^(h)** if inherited. Initial [p] could reflect either a ***b^(h)** or a ***p**. We can rule out a ti-stem whatever the root.

puwatti- HED 9:148; HIL 685 “Madder(?), (dyeing) powder(?)” *Hittite*

A lot is unclear with this word. Kloekhorst (HIL) connects it to the Hittite verb *pūwae-* “to pound, grind” and Cuneiform Luwian *pūwa-* “pound, crush”, which may in turn come from a verbal root ***ph₂u-**. Kloekhorst discusses how the verb is usually connected to Greek *παίω/πτάω* “strike” and Latin *pavīre* “to beat”. LIV reconstructs these, however, to the root ***pieh₂-** [LIV 481-2 schlagen]. It seems that in Hittite ***pi** in virtually all conditions is reflected in by [pi(y)], so in agreement with Kloekhorst I am inclined at the very least to say that

puwatt- and *pūwae-* cannot reflect ***pieh₂-**. ***pi** in Greek regularly became [πτ] and sometimes [π] initially (e.g. σκέπτομαι “I look at”), and I know of no example in Latin becoming anything other than [pi] (e.g. *capiō* “I take”). Puhvel (HED) does not provide an etymology as such, but he does suggest that *puwatti-* could be related to Ugaritic *pwt* “an expensive dye material” and Arabic *fuwattu* “dyer’s madder”. Despite being a probable loan, *puwatti-* appears to have good PIE morphology. It looks like we have an *-att-* action/result noun suffix added to the Luwian verb (the Hittite verb *pūwae-* should show a diphthong stem) and finally given a ***-ih₂-** motion suffix. We cannot expect [tt] to have remained before an [i] in Hittite, unless the word was a loan from Luwian or further afield.

šalhanti-, *šalḫiyanti-*, *šalhitti-* HIL 709-11; See Melchert (1994) p.55 “Growth(?)” *Hittite*

This word may be a Luwian cognate of the Hittite *šalli-/šallai-* “(adj.) big, great, large, important, full-grown, vast, principal, main; (c.) head, chief, notable”, which according to Kloekhorst comes from a root ***selH-**. ***selH-** is said to be the root behind Greek ὅλος “whole, entire, complete”, Latin *salvus* “complete, intact”, Sanskrit *sārva-* “all, whole”, and Old Irish *slán* “complete”. With the exception of Old Irish *slán* these forms all reflect a ***-uō-** suffix (the Old Irish form has a ***-no-** suffix). *šalhanti-* and its variants are always paired with the word *mannitti-* (discussed earlier) which the CHD translates as a “desirable condition in nature”. *šalhanti-* probably has a motion suffix in ***-ih₂-** attached to verbal noun suffix in ***(o)nt-**. Puhvel (HED 6:58-9), in passing, argues that *šalhanti-* is the Luwian equivalent of Hittite *šallatar* “greatness, largesse”, just as *mannitti-* is the Luwian equivalent of Hittite *miyatar* “growth, increase”.

šanezzi-/šaniezzi- HIL 722-3; LIPP 2:671-8 “First-class, excellent, outstanding, pleasant, tasty, fragrant” *Hittite*

šanawazi- “good”

Hieroglyphic Luwian

Kloekhorst (HIL), with some reservations, reconstructs this to the root ***sem-** “one” (as does LIPP). It has the suffix *-ezzi-* which is found on words such as *ḫantezzi(ya)-* “first”,

appezzi(ya)- “backmost”, *katterezzi*- “lower”, and *šārrazi(ya)*- “upper”. This suffix presumably reflects ***-tjo-**.

šarāzziya- HIL 729-30; LIPP 2:682-4 “Upper, superior”

Hittite

šarāzziyatar “height, summit”

Hittite

hrzzi- “upper, superior”

Lycian

These words belong to the root ***ser-** [*LIPP* darüber, oben]. They have the same suffix (***-tjo-**) as found in Hittite *hantezzi(ya)*- “first”, *appezzi(ya)*- “backmost”, *katterezzi*- “lower”, and *šaniezzi*- “first, excellent”.

šarnikzēl- HIL 736-7; LIV 536 “Compensation, compensatory damages, replacement” *Hittite*

According to Kloekhorst this is from the root ***serk(’)-** [*LIV* 536 instand setzen, wieder gutmachen], and it contains a verbal *–nin-* infix (***sr-nen-k(’)-**). This is cognate with Latin *sarciō* “to patch up, mend”. Melchert (AHP 118) reasons rightly that the result noun suffix *–zzil-/–zzēl-* must not reflect ***-tēl-**, because assibilation of the ***t** would not have occurred before an ***e** or ***ē**. Melchert thinks it is possible that the [ē] vowel, written variously as [i-i], [i-e], and [i] could reflect a diphthong ***ei**. Rieken (1999, p.477) seems to support the idea that the suffix is a complex of ***-ti-** and ***-(e)l-** (***-tjel-**). Whether or not we should analyse this suffix as ***-ti-** and ***-(e)l-** or ***-t-** and ***-(e)il-** is a good question. There is very limited evidence for a ***-ti-** suffix in Anatolian outside of the adverb class, and there does seem to be an Anatolian suffix in *–il-* (e.g. *hurkil-* “unnatural sex act, incest, bestiality” > “perversion”; *alil-* “blossom”), as well as *–al-*, *–ala-* (adj.), *–alla/i-*, *–(a)t(t)alla-*, *–ili-* (adj.); and *–ul-*, *–ula-*, and *–ulli-*. Anatolian (and particularly Hittite) preserves a whole string of neuter deverbal nouns in *–Vl-*. The Luwian/Hittite *–al-* stems all seem to form instrumental nouns (*ardal-* “rock cutting saw”; *huhupal-* “a percussion instrument”; *išhiyal-* “band”; (Luwian) *ariyal-* “basket”; (Luwian) *winal-* “staff, club”, (Luwian or Hittite) *tarmal-* “hammer”), and all seem to have zero-grade morphemes in all places except the suffix. Likewise, Hittite nouns in *–ul-* are

neuter and mostly deverbal, and sometimes have instrumental force (e.g. *šešarul-* “sieve” from *šešariya-* “to sift”), although not always (e.g. *paršiul-* “crumb” from *paršiya-* “to crumble”). An instrumental force could be ascribed to *šarnikzēl-* (e.g. “that with which you make good/right” > “compensation”). *šarnikzēl-*, in agreement with words in *-al-* and *-ul-*, appears to have originally been a neuter. In the NH period it appears in the common gender as well. If we accept the idea that *-zēl-* reflects an e-grade *-il-* suffix built on top of a t-stem, the *-il-* suffix seems to have more and more in common with the *-ul-* suffix (i.e. mostly deverbal, originally neuter, sometimes instrumental in force).

šaudišt-/šāwitišt- HIL 739-40 “Weanling” (*lit.* “a (cow/sheep) having one year”) *Hittite*

See my entry for *pargašti-*. This word is a compound of **so(m)-* “one” and **uētes-t-* “year”. **so(m)-uētes-t-*. In PIE we usually find **uēt-es-* as a simple s-stem, but Hittite has extended this with a **-t-* suffix.

šiētti- HIL 755 “A hair-style(?)” *Hittite*

There is no etymology for this word. It is a hapax and is used to gloss Sumerian GÚ.BAR. GÚ.BAR could be from the phrase for “to dislike” or the two elements may mean something like “neck-back” (*lit.* “hair that runs along the back of the neck”) –hence Friedrich’s (*HW* 192) translation as “eine Haartracht?” The double [tt] suggests a **t*, if inherited, which is normally not preserved before an [i] in Hittite. For this reason, it may be best to call this a loanword – from Luwian or Hurrian perhaps. ^{LÚ}GÚ.BAR is glossed as “Jäger” in *Hethitisches Zeichenlexikon* (1989) by Christel Rüster and Erich Neu (p.322). Perhaps *šiētti-* for this reason has something to do with hunting.

^{MUNUS} *šiunzanna-/šiwanzanna-* HIL 765 “A kind of priestess (“mother of God” or “divine Mother”)”
Hittite

This word is taken by Kloekhorst (HIL) as a compound of nominative adjective **dieu-nt-s* “divine” and **anna-* “mother”. **šiwanz* “divine” is unattested in Hittite. Hittite forms a

number of adjectives and nouns in *-ant-*. Examples are *aššuwant-* “good, pleasant” from *aššu-* “good”; *ikunant-* and *ikuna-* “cold”; *irmala-* and *irmalant-* “ill”; *šuppi-* and *šuppiyant-* “holy, sacred”; *dapi-* and *dapiyant-* “entire”; *šankunni-* and *šankunniyant-* “priest”; *gaena-* and *gaenant-* “in-law”; *huhḫa-* and *huhḫant-* “grandfather” (Melchert and Hoffner, 2008 p.56). There appears to be no functional difference between these pairs, and we would almost expect a form **šiuwa-* or **šiu-* to exist with a meaning “divine” –although the short form does not necessarily need to have survived for such a pairing to have existed. We unfortunately do not find this adjective, although we do find a noun ^(d)*šiu-* with the meaning “god”. For this reason it may be better to assume that *šiwanz* is actually a noun, not an adjective, meaning “god”. Anyway, whichever way we interpret this word, the evidence points to an nt-stem rather than a ti-stem.

^(U) *šum(m)anzan-*

HIL 780-1 “(Bul)rush”

Hittite

Kloekhorst (HIL) reconstructs this word as **sh₁u-ent-i-on-*. He discusses how this was originally connected with the Greek word ὑμῖν “sinew, thick skin, membrane” (< **suh₁-men-*), but, following Melchert, he interprets this word as meaning “(bul)rush” rather than “chord, binding”. We might compare this word morphologically to *lahḫanza(na)-* “duck” which seems to have an ending in **-ont-ih₂-h₁on-* (or **-h₃on-*). The [m] or [mm] could well have arisen under the dissimilation of **u₂o* > [umma]. Kloekhorst tentatively suggests that the root is connected to Germanic and Slavic words meaning “to sway” (?**sueh₁(i)-*) [LIV 606 schwanken, sich schwingen]. If connected, the Hittite word would mean something along the lines of “the swaying one”, although there is certainly at least one obstacle against arriving at this conclusion –namely the metathesis of **sueh₁-* (excluding the presence of the **i* on the root) to **sh₁(e)u-*.

šunnutil-

LIV 539; Rieken pp.476-7 “Füllung (filling)”

Palaic

See my discussion of *šarnikzēl-*, which apparently contains the same suffix in an assibilated form. *Šunnutil-* is connected by Melchert (1994, pp.215, 219) to a PA root **súnōt-* from **su-*

ne-h₃-t- (ultimately from the PIE root ***seu_{h3}-** [*LIV* 539 voll sein/werden]). The gemination of the [nn] is apparently due to the ***-ne-** infix being in the zero-grade, and consequently the laryngeal ***h₃** is assimilating to the preceding nasal. Palaic [i] usually reflects an ***i**, although it can reflect an ***e** pretonically (see Melchert 1994, p.216). If Palaic *-ttil-* is related to Hittite *-zēl-*, we could probably say that Hittite preserves an e-grade on the suffix whereas Palaic preserves a zero-grade. This could be evidence for an original ablaut, although because the evidence is only on the suffix it would be impossible to say whether this is a proterodynamic or hysterodynamic ablaut pattern, or something else entirely.

puwatil- Rieken p.477 “Vergangenheit (‘past’ –in the sense of earlier life)” *Luwian*

Luwian *puwatil-* is not particularly well understood. It only attests a single [t] which suggests that this may not be the same suffix found in Palaic *šunnuttil-* above, or in Hittite *šarnikzēl-*. On the whole Luwian conforms to the same orthographical conventions as Palaic and Hittite, so we are probably better off reconstructing a PIE ***d^(h)** for this [t].

tayaz(z)il- HIL 809; *LIV* 616 “Theft” *Hittite*

tayazzilatar- “theft” *Hittite*

Kloekhorst (HIL) agrees with *LIV* in reconstructing a root **1.*teh₂-** meaning “to steal” [*LIV* stehlen]. Kloekhorst also takes up Rieken’s idea (1999, p.476) that the *-zzil-/zēl-* suffix represents ***-ti-** plus ***-il-** (see, for example, my discussion of *sarnikzēl-* and *šunnuttil-*). Interestingly, we have two ti-stems that can be reconstructed back to the same root: Old Church Slavonic *tatb* and Old Irish *táid*, both meaning “thief” not “theft”. These two examples are agent nouns whereas the Hittite seems to be an event noun. I am of the opinion that *-zzil-* suffixes are complexes of ***-ot-** and ***-(e)il-**, not ***-o-ti-** and ***-il-**, mainly because there is little to no evidence for a ***-ti-** suffix in Anatolian outside the adverb system.

taganzipa- HIL 812-3 “Earth spirit (Goddess)” *Hittite*

This word is fairly well understood as being a compound of *tagan* (from PIE **d^hg^hōm*) “earth” and *zipa-* (from **sepa-* (?) “genie, spirit”. Although we often find a [z] before an [i] to show an assibilated **t*, this is surely not the case here. It is most likely that this word is not a ti-stem.

taišzi-

HIL 811; LIV 136-8 “Hay-barn”

Hittite

Kloekhorst (HIL) reconstructs this word to the root **d^heh₁-* [LIV 136-8 stellen, legen, setzen; herstellen, machen]. Kloekhorst further analyses this word as **d^hoh₁-es-ti-*, and Rieken (1999, p.190) reconstructs it as **d^hoh₁-es-d^hh₁-ti-*. Such a reduplication (or compound) appears unparalleled to me, in any of the Indo-European languages, as there is generally no intervening suffix between reduplicated element and the root. Again, Melchert (1994, 166) reconstructs the form as PA **taist-ti-*. I am still somewhat sceptical that this word could preserve a **-ti-* suffix (see my discussions of *pargašti*, *dalugašti*, *palḫašti*-, and *lumpašti*, for example). The downside to my interpretation, which follows Oettinger’s suggestion of **d^hoh₁-es-t-i*¹¹¹, is that the [t] should not, in this instance, have assibilated before the [i], as this ought to have been prevented by the preceding [š]. For this very reason Melchert has provided a solution with **st-t* becoming **st^st* then [šz]. Kloekhorst (HIL 26) assumes that PIE dental stop + dental stop clusters developed in Hittite phonologically equivalent to /TsT/. For example, the 3.sg.pret form of **h₁ed-* (**h₁ed-to-*) would have become /ʔedsta/ (represented by *e-ez-za-as-ta*). Following Kloekhorst (HIL) I reconstruct a [z] from assibilation of **t* before **i* as /t^si/ and [z] from the insertion of **s* between two dental stops as /TsT/. As I understand it, Melchert’s reconstruction **taist-ti-* would have become first **taiststi-*, and following the assibilation rule /taistst^si/. While this sounds plausible, the question remains as to whether the epenthetical **s* would have prevented assibilation, just as the conditions prevented the assibilation in *e-es-ti* “he/she/it is” (< **h₁es-ti*). I am not aware of any other evidence that suggests this epenthetical **s*, like an original **s*, does not block assibilation.

¹¹¹ Norbert Oettinger, *Die Stammbildung des hethitischen Verbums* (Erlanger Beiträge zur Sprach und Kunstwissenschaft vol.64) (1979), p.477.

Many scholars connect this noun at any rate to the Hittite verb *taišta-*ⁱ “to load” (HIL 610), which in my mind could easily reflect **d^hoh₁-es-t-(o)i-*, but which still receives reconstructions complicated by reduplication (as in Rieken). Mine and Oettinger’s reconstruction **d^hoh₁-es-t-i(h₂)-* avoids the following: (1) totally random reduplicated words with derivational morphology on the first element¹¹², or compounds with both elements being from the same root; (2) reconstruction of a suffix which has very little reason to be reconstructed other than its appearance in apparently later Indo-European languages.

taršanzipa- HIL 849 “Some type of temple spirit” *Hittite*

See my entry for *taganzipa-*. This word appears to be a compound of *taršan* and *zipa* “spirit”. *taršan* refers to an object in a temple –some sort of room divider to separate the entrance of the temple from the temple sanctuary. Presumably the word refers to a spirit which inhabits this part of the temple. I think it is safe to rule this out as being a ti-stem.

^{LÚ} *taz(z)elli-* Rieken (1999) p.496 “Priest” *Hittite*

Rieken recognizes this word as a loanword, and Friedrich (KHW) specifically argues that it is Hurrian. Hurrian formed plurals to i-stems with the form *-enna*¹¹³ which is shown in the form *tazellenna*. We also have the ^{LÚ} Sumerogram determiner to indicate this is designating a person.

tuhalzi- “A sacrifice or sacrifice animal” *Hittite*

¹¹² The suffix in question is **-es-* which often participates in the Caland system. For example, Sanskrit s-stem *téjas-* “edge”, “sharpness” appears as an i-stem when it is the first member of a compound. This is seen in Young Avestan *tizīarsti-* “having a sharp spear”. If *taišzi* is a compound, then we would need to consider whether Hittite reflects a time before the development of the Caland system –I doubt this, but it is beyond the scope of my thesis to go into this.

¹¹³ E. A. Speiser, *Introduction to Hurrian* in *The Annual of the American Schools of Oriental Research* (vol. 20), 1941 §138.

Friedrich (KHW) takes this as being a Hurrian loanword. If Hurrian, it possibly contains the Hurrian appurtenance/relational adjective suffix in *-zi*,¹¹⁴ or perhaps the Hurrian abstract/concrete noun suffix.¹¹⁵

^{LÚ} *tuhkanti-* Rieken 1999, pp.318A, 356f. “One of the highest dignitaries –belonging to the Royal family” *Hittite*

There is no etymology for ^{LÚ} *tuhkanti-* as far as I am aware. Friedrich (KHW) and Rieken seem to think it has a Hattic origin.

tukkanzi- “Cattle fodder (?)” *Hittite*

This word lacks an etymology. The double [kk] suggests an inherited ***k** which makes a connection to ***d^heug^h**- “to be of use” [*LIV* 148-9 treffen](cf. Vedic *duhé* “I give milk”) unlikely. So too would the connection to the verb *tuk-^{āri}* “to be visible, to be seen, to be important” be unlikely on semantic grounds, although acceptable in terms of phonetics. A foreign (probably Hurrian) origin could be possible (compare, for example, Hurrian *taržuwan=zi* ‘mankind’ from *taržuwani* ‘man’). There are only four words in Hittite that have the suffix *-anzi-*: *tukkanzi-*, ^{NA4} *kallanzi-*, ^{NINDA} *ampanzi-*, ^{NA4} *tupanzi-*. ^{NINDA} *ampanzi-* could be connected with Hurrian *ambassi-* “some sort of object that can be moved” (HEG) or, perhaps better, with Hurrian ^{NINDA} *ampura-* “a pastry/type of bread” (HEG). If this word were inherited, I suspect it would have more in common with *lahhanza(na)-* “duck” (*lit.* “the swimming one”), and would be formed from the combination of the *-ont- and *-ih₂- suffixes.

tum(m)antiyatt- HIL 898 “A kind of building, ear-building(?)” *Hittite*

This is a hapax which makes interpretation difficult. It usually has an ^É determinative meaning “building”. Kloekhorst (HIL) notes that the word resembles strongly Cuneiform Luwian

¹¹⁴ Ibid. §160.

¹¹⁵ Gernot Wilhelm, *Hittite* in Roger D. Woodward in *The Ancient Languages of Asia Minor* (2008), p.90.

tummant- “ear” (cf. Hittite *ištāman-/ištamin-* “ear”, Greek στόμα “mouth”, Avestan *staman-* “maw” < ***steh**₃-**men-**) –hence the translation “ear-building”.

^{DUG} *tupanzakki-* KHW 228 “Some kind of container/vessel ” *Hittite*

The only thing clear about this hapax is that it has the Sumerian ^{DUG} “container” determinative. The ending in *-akki-* looks foreign, and it is often wise to be cautious when a [z] follows an [n] or other resonant. It is possible that this is a compound, although I am unaware of the two elements existing independently. Phonetically, if inherited, the [t] could reflect a ***t** or ***d**^(h); the [p] would reflect a ***b**^(h); and the double [kk] would probably reflect a ***k**^(c). This does not give us a lot to work with unfortunately.

tuzzi- HIL 908; LIV 136-8 “Army, military forces; military camp” *Hittite*

tuzziyant- “Army” *Hittite*

tuzziyašeššar “Army(camp(?))” *Hittite*

^{NINDA} *tuzzi-* “Soldier-bread” *Hittite*

Building on the initial work of Carruba and Melchert (see HIL 908 for references), Kloekhorst reconstructs *tuzzi* with the root ***d^heh**₁- [LIV 136-8 stellen, legen, setzen; herstellen, machen]. More specifically Kloekhorst reconstructs a zero-grade form of this root with an *-uzzi-* instrumental suffix (***d^hh**₁-**uti-**). Although there seems to be a fairly large semantic stretch between a verb meaning “to put/place” and the word for an “army” or “military camp”, the use of such of this verb in the nominal system could be paralleled by the use of the Hittite verbal phrase *katta dai-* meaning “to besiege” (lit. “to put (*dai-*) down (*katta*)”).

^{MUNUS} *udati-* “Widow (?)” *Hittite*

Emmanuel Laroche argued that the [u] in this word reflected /wi/, and the word was phonetically closer to /widati/¹¹⁶. In his transcription of the text, *the Vow of Puduḥepa*,^{MUNUS} *udatis* appears as ^{MUNUS} *u-ta-ti* or ^{MUNUS} *u-da-ti-is*. I think it is fairly safe to say that the value of the first [t] or [d] reflects an inherited ***d**^(h). This is most likely the case for the second [t] as well, because we do not have [tt] in any of the instances it appears, and because a ***t** would be assibilated before an ***i**.^{MUNUS} is the Sumerogram determinative meaning “woman”. It is possible that this word is cognate with the English word *widow*. We might compare Greek ἡθεις “unmarried youth”, Latin *vidua* “widow”, Old Irish *fedb* “ibid.”, Old Prussian *widdewū* “ibid.”, OCS *vdova* “ibid.”, Gothic *widuwo* “ibid.”, and Sanskrit *vidhāvā* “ibid.”. These forms, if Dunkel (LIPP 2: 854) is correct, seem to point towards a form like ***ui-d^heueh₂**-. Kroonen (EDPG 585) prefers ***h₁ui-d^hh₁-(e)u-o/eh₂**- as a reconstruction, and Mayrhofer (EWA 2:556) reconstructs ***Hui-d^heueh₂**- which agrees with Dunkel in all details except for the first laryngeal of unknown quality. The Greek form explains the reconstruction of the laryngeal by Kroonen and Mayrhofer –presumably the ***h₁** laryngeal reflex (normally [ε]) underwent metrical lengthening. The particle ***(h₁)ui-** is often explained as a dissimilated form of the number two ***dui-** (see LIPP 2:168-74), and bears the semantics of “in two”, “separate”, “divided”. If this is indeed a compound as these scholars have suggested, we are none the wiser what the second element may be. There is a root ***d^heue-** meaning “to run” [LIV 147-8], but this does not seem to fit that well semantically. If Kroonen is correct, we probably have the root ***d^heh₁**- [LIV 136-8 *stellen, legen, setzen; herstellen, machen*] with an overall meaning of something like “one who is made/put separate”. Despite all of this, aside from the odd spelling of /wi/, we have one major problem with the Hittite word: we do not, as far as I am aware, have a suffix in *-ati-*.

upāti- HIL 923; Starke (1990)p.198 “Land-grant”

Hittite

upatit- “territory”

Hieroglyphic Luwian

¹¹⁶ Emmanuel Laroche, *Le vœu de Puduḥepa* in *Revue d'Assyriologie et d'archéologie orientale* Vol. 43, No. 1/2 (1949), pp. 55-78.

^(LÚ) *upatitalla-* (?)

Hittite

Melchert connects *upatit-* with the Cuneiform Luwian verb *upa-* “to furnish, to grant” (CLL 242). Starke (1990, p.198) takes this as a *-it-* stem, which unfortunately leaves an odd looking (i.e. non-PIE) root *upat-*. For this reason Starke thinks it may be of Semitic origin (cf. Old Assyrian *ubadinnum* and Ugaritic *‘ubdy* “territory”). These suggestions seem reasonable to me, especially since the single [t] and [p] would point phonetically to /d/ and /b/ respectively.

uwantiwant(a)- HIL 955-6 “Lightning(?)”

Hittite

wantem(m)a- “radiation of sun or lightning”

Hittite

wantewantema- “glowing (of the sun), lightning”

Hittite

All of these words appear to be derivatives of the verb *want-/wantae-/wantiija-* “to glow, to light”. *Wantem(m)a-* and *wantewantema-* both seem to preserve the Hittite *-ima-/ema-* suffix, and *uwantiwant(a)-* and *wantewantema-* both seem to be reduplicated forms. There seems to be a Hittite verbal base in *want-* present, but Kloekhorst (HIL) is unaware of any cognates. The value of the [t] is unclear. It may reflect an inherited **t* or **d^(h)*. On the whole we would expect **t* to have been assibilated to a [z] before an **i*, so one of the latter option seems more likely. The *-ima-/ema-* suffix is somewhat poorly understood because it frequently shows a double [mm]. It is possible that it reflects a zero-grade **-men-/mn-* suffix with assimilation of the final **n* (see Rieken, 1999, p.110A for a small discussion), although the forms with single [m]s tend to be older, so it is possible that an **-imo-* suffix was in the process of being reinterpreted as a **-men-/mn-* suffix. Note that nasals can undergo germination in Hittite when followed by an accented syllable, although this is seldom observed with **m* (see Kimball 1999, pp.310-14).

^{NINDA} *wantīli-* HIL 956; Starke (1990) p.345 “A kind of bread”

Hittite

Starke argues that this word, with an adjectival suffix in *-ili-*, means “hot” –basing his suggestion on a supposed connection to Hittite *want-/wantae-/wantiija-* “to glow, to light” (see

above entry). ^{NINDA} of course is the Sumerogram determiner meaning “bread”. If Starke is correct it should mean “hot bread”. At this stage there is little evidence to confirm Starke’s interpretation, and the root to which he connects it is itself in doubt, so I am reluctant to reconstruct a ti-stem, especially considering that we would have expected *t to assibilate to [z] before an *i.

warpuzi- HIL 965-6; LIV 690 “Object used in bathing(?)” *Hittite*

Kloekhorst (HIL) argues that this word is connected to the Hittite verb *warp-* “to wash, to bathe; rub” which would come from the PIE root **uerp-* [LIV 690 hin- und herdrehen]. Kloekhorst also sees it as a neuter instrumental noun in *-uzzi-*, although the single [z] needs to be explained here considering this suffix usually shows double [zz]. There have been attempts (see HIL 26) to explain [z] as the voiced counterpart of [zz] following the same model found with the stops (e.g. [t] represents /d/ and [tt] represents /t/), although this is not the standard view.

^{UZU} *wappuzzi-* HIL 958 “Tallow” *Hittite*

This word is a hapax. Because this word has the same meaning as the phonetically very similar ^{UZU} *appuzzi-*, Kloekhorst (HIL) thinks that ^{UZU} *wappuzzi-* is possibly a scribal error. See my entry for ^{UZU} *appuzzi-* for a discussion.

wattai- HIL 987 “A bird” *Hittite*

This is believed to be a phonetic spelling of the Sumerogram MUŠEN^{HL.A}. This Sumerogram is always preceded by *hatugi-* “terrible”, as is *wattai-*. This has a diphthong-stem in *-ai-*, so Kloekhorst (HIL) argues that it is most likely inherited. No cognates are known, and at this stage it is impossible to say whether the [tt] is a part of the root or the stem.

^{TUG} *wattarwiza*[“A dress, gown, frock” *Hittite*

I am unaware of any etymologies for ^{TÚG}*wattarwiza*]. We know that it refers to an item of cloth from the ^{TÚG} determinative. It resembles Hittite *wattaru-* “spring/well”, although a better explanation may be the name of the city *Wattarwa-* –which may in turn derive from the word *wattaru-*. Kloekhorst (HIL 989) states that *wattaru-* has no cognates either. He provides the etymology of **uot(H)-ru-*. I question his reconstruction of a **-ru-* suffix because I am unaware of such a suffix existing in Anatolian or other IE languages. I think it would be better to reconstruct a complex of the **-(o)r-* and **-u-* suffixes.

wizzapant- / *wesz(za)pant-* HIL 1017, Rieken (1999), pp. 26, 81 “Old, grown old” *Hittite*

Kloekhorst (HIL) takes this as a univerbation of **uet-s h₁poi-h₁i-ent-*. The element *wizza-* he takes as a genitive (Rieken, as a nominative) of the word for “year”, *witt-* (**uet-*, cf. Greek ἔτος “year”). He derives element *pant-* as a verbal noun in **-nt-* from the verb *pai-* “to go”. The overall meaning would be something like “having gone with regard to the year(s)” which develops to “having gone weary”. We probably have to assume that the [zz] is a regular result of the **ts* cluster rather than from **-ti-*.

^{GIŠ} *zahurti-/zaharti-* HIL 1024-5 “Some kind of chair or couch (wood)” *Hittite*

Kloekhorst (HIL) argues that this word must have a non-IE origin because of the single [h] – despite it being attested in Old Script texts, as loanwords are more frequent later –because **h₂* in this intervocalic position would normally be written with a double [hh]. The single [t] here probably reflects a /d/ which, if inherited, would continue an IE **d^(h)* and not a **t*.

zilatiya LIPP 2:139 “For/in the future” (adv) < “later in the day” *Hittite*

zilatiya “For/in the future” (adv) < “later in the day” *Cuneiform Luwian*

According to Dunkel (LIPP) this is a compound of *zila* “later on” (cf. Cuneiform Luwian *zīla*, Hieroglyphic Luwian *zi-la*) and *tiya* “in the day” (for a discussion, see LIPP 2:489 fn.14). We would have expected **-ti-*, or **-tjo-* to have undergone assibilation to [-zzi(ya)-], so the analysis of *-tiya* as **d(i)j-á* “day” is reasonable here. We expect initial **di* to assibilate to [ši]

in Hittite (e.g. *šiwatt-* “day”), although the other Anatolian languages lack this feature (e.g. Luwian *Tiwat-* and Palaic *Tiyat-* “the Sun God” from PIE **diuot-* “heaven”). However, there seems to be quite a lot of evidence suggesting that this assibilation never occurs medially (see Melchert 1994, 118).

zizzipanti- HIL 1039 “Some type of herb/plant” *Hittite*

This is a hapax, and as such the meaning is not clear. There is no etymology at this stage. This is unlikely to be a *ti*-stem. It appears to be an *nt*-stem with an *i*-motion suffix attached. It appears to be a reduplicated form whose root is probably something like **tib^(h)-*, although I am not aware of any root in PIE that resembles this. It bears some similarity to the Latin word *tibia* “reed-pipe, shin-bone”, which has no sure etymology itself, although De Vaan (EDL 619) suggests that *tibia* is possibly related to Greek σίφων “tube, pipe”. Aside from the [u] vowel, *τύφη* “reed mace” has some resemblance also. If these words are connected, we would probably need to reconstruct a root **ti^hb^h-* which does not look very PIE.

śrfašta/i- Rieken (1999) p.223 “Right (opposed to left) side” *Lydian*

Rieken reconstructs this with a suffix in **-osti-*, which she would reconstruct in words such as *palḥašti-*, *lumpašti-*, and *dalugašti-*. Melchert (AHP 371) takes this suffix as an **-osto-* suffix with *i*-motion, probably differentiating this suffix from that found in *palḥašti* and the other connected words. Melchert suggests this is the same suffix as seen in Latin *angustus* “narrow”. De Vaan (EDL 42), in agreement with Melchert, argues that *angustus* is based off a *s*-stem **h₂emg^h-os-* “narrowness” which is in turn adjectivized with **-to-* (**h₂emg^h-os-to-* “characterized by narrowness”). The major flaw in this interpretation for the Lydian word is that **-to-* suffixes do not seem to exist in Anatolian. I certainly agree with the *s*-stem interpretation in the first part of the suffix complex. Turning to an etymology, I am not aware that any have been proposed. On the surface the word resembles Luwian *išarwili* - “pertaining to the right hand”, probably derived from *iššari-* “hand”, but this appears to be

from the root **g^hes-r-* “hand” (cf. Hittite *keššar/kešr-* “hand”, Greek *χείρ* “hand”, Sanskrit *hásta-* “hand” (< **g^hes-to-*)).

teśašta/i- Rieken (1999) p.223 “Left side”

Lydian

Much has been said about this word’s suffix in the above entry for *śrfasta/i-*. Melchert mentions that Roberto Gusmani in his *Lydisches Wörterbuch* (1964) connects the word to **dek’s-*, but Melchert himself finds this interpretation “extremely dubious” (Melchert, 1994, 345). Lydian [e] could continue a PIE **e*, as well as a nasalized vowel from the sequence **Vns*. Lydian [t] could be from **t* or **d^(h)*, although it is hard to rule out a simplified, initial cluster (e.g. **st*). Although totally speculative, the root **dens-* [*LIV* 118-9 *kundig werden, kunstfertig werden*] could be an etymological contender. The root is at least attested in Anatolian with the Hittite adjective *daššau-/daššu-* “strong, powerful, heavy”. A euphemistic/positive meaning would be consistent with other PIE languages (cf. Greek *ἀριστερός* “left” (*lit.* “the better one”); Latin *sinister* (*lit.* “the more obtaining one” –EDL 566); Sanskrit *vāma-* (*lit.* “dear, esteemed” –EWA 2:543); OIr *túath* (*lit.* “good, safe” –EDPC 387), although I must note that many of these interpretations are conjectural.

ANATOLIAN DISCUSSION

I have included 174 items in my Anatolian analysis, excluding a large number of items which are clearly derivatives of a number of these 174 forms. I was able to rule out many that appeared to be loanwords, or that were phonologically inconsistent with **-ti-*.

Fairly undisputed are 6 adverbs in **-ti-*: *andurza* “in doors”; *annaz(a)* “formerly, once upon a time”; *arahza* “around, away”; *kēz/kēzzi* “from this”; *padummazzi* “at the feet”; *parza* “through, in reverse, backwards”. There are 5 locational adjectives in **-tjo-*: *appezzi(ya)-* “backmost”; *šan(i)ezzi-* “first class, excellent, good-tasting”; *šarāzzi(ya)-* (which corresponds to Lycian *hrzzi-*) “upper, superior”; *katterezzi-* “lower, inferior”.

One possible reflex of the PIE *ti*-stems are the Hittite *uzzi*-stems. I have counted 14 of these, although some are controversial: *annanuzzi*- “leather halter, curb”; *appuzzi*- “animal fat, tallow”; *hariuzzi*- “wickerwork table”; *intaluz(z)i*- “shovel”; *išgapuzzi*- “support, brace”; *išhuzzi*- “girdle”; *išpanduzzi*- “libation contents, libation vessel”; *išparuzzi*- “rafter”; *kunkunuzzi*- “hard mineral used for tools and weapons”; *kuruzzi*- “tool for cutting”; *luzzi*- “forced service, public duty”; *tuzzi*- “army”; *warpuzi*- “bathing object”; *wappuzzi*- possibly a spelling mistake for *appuzzi* “animal fat, tallow”. The meaning of *uzzi*-stems is fairly predictable, as they almost always have the instrumental meaning “something with which one VERBs”. For example, *išpanduzzi*- is “something with which you libate”, which is either the libation vessel or the contents of that vessel. Two forms are difficult, because they do not appear to have an underlying verb: *hariuzzi*- “wickerwork table”, *intaluz(z)i*- “shovel”, and *appuzzi*- “animal fat, tallow”. I have argued that *hariuzzi*- could be connected to Latin *(h)arundō* “reed, cane”, and Greek ἄρον “Arum” (a genus of plants distantly related to lilies). If this is the case, we might conclude that the base meaning of *hariuzzi*- is “something made from reed or cane” –hence a “wickerwork table”. I argued above that *appuzzi*- may be from the Hittite verb *ēpzi* / *appanzi* “to seize, grasp, capture” from PIE **h₁ep-* [*LIV* fassen, ergreifen]. If this is true, then we would probably have to posit a meaning “a thing with which you capture something” (i.e. “bait”. cf. *āppala*- “trap, deceit”). *intaluz(z)i*- “shovel” may well be a Hurrian loanword, as it appears in a list of Hurrian implements. It is hard to determine whether *išparuzzi*- “rafter” has an instrumental meaning. “That with which one spreads out/strews” describes an instrument that helps spread something out (e.g. “a rake”), but semantically a “rafter” seems more like a thing upon which the action is directed (i.e. “the thing that has been spread out”). *Tuzzi*- “army, army camp etc.” as I discussed earlier may be connected to the Hittite phrase *katta dai*- “to besiege” (*lit.* “to put down”). *Luzzi*- probably comes from **leh₁-* [*LIV* 399 nachlassen, (zu)lassen] meaning “to ease off, allow, leave, permit”. The underlying meaning would therefore be something like “that [work] which releases one from his or her obligations”. *išhuzzi*- is quite straightforwardly from the Hittite verb *išhai-/išhi*- “to bind, wrap” (therefore *išhuzzi*- means “that with which one binds or wraps” –hence “girdle”), ultimately from PIE **sh₂ei-* [*LIV* 544 fesseln, binden]. *Kuruzzi*- means “that with which one cuts” from Hittite *kuer^{zi}* / *kur-* / *kuṣar*- “to cut (up), mutilate” (< **k^uer-*) [*LIV* 391-2 (ab)schneiden, schnitzen]. *Kunkunuzzi*- “that

with which one strikes, kills” from Hittite *kuen*^{-zi} /*kun*- /*kuṽa(n)*- “kill, slay, ruin” (< ***g^{uh}en**-) [*LIV* 218-9 schlagen]. *Annanuzzi*- “leather halter, curb” literally could mean “that with which one educates or trains” from the Hittite verb *annanu*^{-zi} “to train, to educate”. *Warpuzi*- possibly comes from the verb *warp*^{-zi} “to wash, to bathe, to rub” and might have the meaning “an object with which one bathes”. *Warpuzi*- has a few possible cognates in PIE (***uerp**-) [*LIV* 690 hin- und herdrehen] aside from the Hittite o-stem *warpa*- (meaning unknown), and an *-**os-ih₂**- suffixed *warpasī*- “a bowl (for washing(?))”: Greek to-stem ῥαπτός “stitched, patched”, ment-stem ῥάμμα “something that has stitches”, id-stem ῥάφίς “needle”, o-stem -ῥάφος “a stitch”, u-stem ῥάφεύς “stitcher, cobbler”, eh₂-stem ῥάφῃ “a seam, suture”, and various *-**ter-/tor**- based stems such as (Mycenaean) *rapitira₂*. Finally, *išgapuzzi*- “support, brace” or “scraper” could literally mean “that with which you support/make firm” (if connected to Vedic *skabh*- “make firm, support” from ?***skeb^hH**- [*LIV* 549-50 stützen]) or “that with which you scratch or scrape” (if connected to ***skab^h**- [*LIV* 549 kratzen, schaben]). Most of these words have a clear instrumental force, with the exception of *hariuzzi*- which has, if anything, and ablatival (origin/material) function. *Intaluz(z)i*- is obviously too poorly understood. Interestingly, Dunkel (LIPP 1:185) notes the function of the adverb suffix *-**ti** as “ablativisch, instrumentalisch.” Ablatives and instrumentals (or agents, at least) seem to be closely connected in the process of grammaticalisation too: The *World Lexicon of Grammaticalization* by Bernd Heine and Tania Kuteva (2004) states that cross-linguistically words with ablative force are a common sources of words with agentive and/or material force.¹¹⁷ Anatolian, as we have seen, has preserved the ablatival/instrumental adverb suffix, which appears to have spread to the case system (e.g. the Old Hittite sg. and pl. ablative ending in *-az*), but it seems highly unlikely that it was used to derive nouns. The [u] in *-uzzi*- could reflect an original u-stem, although none of these stems in *-uzzi*- attests a cognate with a simple u-stem, although *išhpanduzzi*- has a connected form *išhpantuwa*- “libation vessel” which may reflect an o-stem (Hittite a-stem) built on an original u-stem. There is a form *išhiul*- “obligation, treaty” which is an *ul*-stem built directly off the verb *išhiya*- “to bind” (note, however, that *išhuzzi*- seems to be built on the bare verbal root, unless some process has deleted the [iy] in *išh(iy)uzzi*)(HIL 393-3). If *išgapuzzi*- is a scribal error for *ištapuzzi*- (note that the cuneiform

¹¹⁷ Bernd Heine and Tania Kuteva *World Lexicon of Grammaticalization* (2004), p.317.

signs are very similar: [ta] 𐎢𐎣, [ga] 𐎢𐎣), we might be able to connect it to *ištappulli*- “cover, lid, stopper”, although this is highly speculative (see HIL 399-400 and HED 2:415-6). All other connections are tenuous. *Appuzzi* may be connected to *appat(a)riye/a*-^{zi} “to take in pledge, to confiscate” (this verb must be built on a non-attested verbal noun **appātar*), *appala*- “trap, snare”, and *appaliyalla*- “trapper, deceiver” (HIL 242-3). *Annanuzzi*- is possibly connected with *annanuḫḫa*- “trained (?)” (there is only one other instance of the suffix *-ḫḫa*- in Hittite, which makes this word somewhat suspect: *parštuḫḫa*- “earthenware cup (?)”, possibly from *parštu*- “leaf, foliage”)(HIL 177). *Kunkunuzzi*- may be connected with the name *Kunalli*- (e.g. “Butcher”)(HED 4:211). Next to *kuruzzi*- there is a simple o-stem *kuera*- “field parcel, territory, area” in Hittite, and a number of other forms in Luwian: *kuramma*- “cutting”, *kuranna/i*- “cutter”, *kurattar-/kuratn*- “cutting”, *kuraštra/i*- “schism”, *kuršawar-/kuršawan*- “island”. One hapax *warpan(n)ala*- “an adjective describing sacrificed sheep” has been connected with *warpuzzi*-, but without more evidence this can never be proven (HIL 967-8). All in all, it is remarkable that a group of languages that favours the systematic stacking of suffixes should lack other examples of u-based suffixes. This makes me seriously suspect that we are not looking at a **-u*- suffix at the base of *-uzzi*-, but something else. Hittite [u] can have several sources: (1) PIE **u*; (2) PIE **eu* or **ou*; (3) in the case of the acc.pl. common gender nominal ending in *-uš*, **-ms*; (4) the vocalization of **r*, **l*, **m*, and **n* following **u*, labiovelars, and perhaps following **h_{2/3}*.¹¹⁸ Scenarios (3) and (4) may be close to what is going on here. In scenario (3) **-ms* presumably developed into **-ums*, then **-uns*, then *-uš*. The loss of the nasal would be due to assimilation to the following **s*, followed by reduction of the final **ss* cluster. It could be possible that we have a zero-grade form of the hetero-clitic r/n-stem verbal substantive in *-(u)war*. Interestingly, this suffix is present in Luwian *kuršawar-/kuršawan*- “island” which is related to the Hittite *kuruzzi*- (note that the [š] in the Luwian form is not well understood). I suggest that form would have once been **k^ur-ḫn-*, to which the **-t*- and **-ih₂*- suffixes would have been added (i.e. **k^ur-ḫn-t-ih₂-*). **ḫn* would have been transformed to Pre-Hittite **un*, and **t-ih₂* would presumably have undergone assibilation first to form Pre-Hittite **t^sih₂*. Finally the nasal would have been deleted before the affricate **t^s*. Just to reinforce

¹¹⁸ See Kimball (1999), pp.247-52, for a full discussion.

my point, I have compiled a list below that compares the deverbal words in *-uzzi-* and the verbal nouns in *-(u)war*:

<u><i>-uzzi-</i></u>	<u><i>-(u)war</i></u>
<i>annanuzzi-</i>	<i>annanumaš</i> (gen.sg)
<i>appuzzi-</i>	<i>ēpuwaš</i> (gen.sg.)
<i>išhuzzi-</i>	^{GIŠ} <i>išhāwar</i> “yoke-plough-set (?)”
<i>išhpanduzzi-</i>	<i>šippanduwar</i>
<i>kunkunuzzi-</i>	<i>kuen(n)umar</i>
<i>kuruzzi-</i>	<i>kuršawar-/kuršawan-</i> (Luwian) “island”
<i>luzzi-</i>	<i>lāuwar</i>
<i>tuzzi-</i>	<i>tiyauwar</i>
<i>warpuzi-</i>	<i>warpuwar</i>

The correspondences are significant, considering that some roots have very few attestations throughout their paradigm (e.g. *annanu-* attests a 3.sg.pres.act. form, a 3.pl.pret.act form, a participle in *-ant-*, the verbal noun in *-(u)war*, an infinitive, and another verbal form in *-ške-*). I think this is much closer to the reality of the *-uzzi-* suffix. Hittite and Luwian show no evidence of deriving *u-* stems from these verbal roots, nor do they have any clear instances of inherited *ti-* stems. However, each de-verbal *-uzzi-* noun does have a corresponding *-(u)war* form. Just to clarify the semantics, the *-(u)war* suffix would derive a neuter verbal noun from the verb, the *-t-* suffix would create a common gender abstract noun, and the **-ih₂-* suffix would act as a kind of individualising possessive agent/patient marker. For example, *warp-* “to wash” > *warp-uwar-* “washing” > **warp-un-t-* “cleanliness” > *warpuzi-* “that which brings about/relates to cleanliness”.

The Anatolian *-ašti-* suffix, usually considered to be a complex of the **-os-* and **-ti-* suffixes (Rieken, 1999, p.223, for example), can be found in six words (note that the Lydian forms may reflect **-osto-*, not **-osti-*): (Hittite) *dalugašti-* “length”; (Luwian/Hittite) *lumpašti-* “pain, grievance, chagrin”; (Hittite) *palḫašti-* “width, breadth”; (Hittite) *pargašti-* “height”; (Lydian) *śrfašta/i-* (?) “right side”; (Lydian) *teśašta/i-* (?) “left side”. Three of the six are obviously abstract deadjectival nouns, and the two Lydian words might also be grouped the same way (e.g. “left” > “left side”). *lumpašti-* has been connected to Greek λῶπη “pain of body; sad plight or condition; pain of mind, grief” and is possibly related to PIE verbal root **leup-* [LIV 420 (ab)schälen], which is mostly restricted to Balto-Slavic. Unfortunately *lumpašti-* has no cognates in Anatolian of which we are aware, so it is impossible to say for sure whether it too is derived from an adjective. *dalugašti-* has several Hittite cognates: *talugi-/talugai-* “long (adj.)”; *talūga* “long (adv.)”; *daluknu-* “to lengthen (vb.)”; *daluknul-* “lengthening (n.)”; *dalukēšš-* “to become long (vb.)”. A form such as *dalugašti-* does not appear to be built on the i-stem adjective. *Palḫašti-* has the following Hittite cognates: *palḫi-/palḫai-* “wide, broad”; *palḫanu-* “to broaden(?)”; *palḫatar/palḫann-* “width”; ^(DUG)*palḫa-/i-* “a broad vessel”; *palḫēšš-* “to become wide or broad, to expand”; *palḫeššar/palḫešn-* “width”. To this list we might add some Luwian cognates as well: *palḫaia-* “wide, broad (adj.) (?)”; *palḫa-* “to make flat”; *palḫamman-* “lying flat, spreading out (adj.)”; *palḫašḫa-* “breadth(?) (n.)”. *Pargašti-* has the following Hittite cognates: *parku-/parkau-* “high, tall (adj.)”; *parkiya-* “to raise, to lift (vb.)”; *parknu-* “to make high (vb.)”; *parganul-* “elevation (n.)”; *pargatar-* “height (n.)”; *parkēšš-* “to become high or tall (vb.)”; *parkeššar/parkešn-* “height (n.)”; *parkiyanu-* “to raise, make rise (vb.)”; *parkuwatar* “height (n.)”; *parkuēšš-* “to become tall (vb.)”; *pargawēške/a-* “to become high or tall (vb.)”. We can also add Cuneiform Luwian *parraia-* “high (adj.)”. I am not aware of any cognates to the Lydian forms. Rieken (1999 p. 223) connects *śrfašta/i-* “right side” with Hittite *šarku-* “high, strong”. As I understand it, Lydian [f] always reflects a labial (either **p*, **b^(h)*, or **u*, but not a labiovelar), so I am inclined to rule out the connection between *śrfašta/i-* and *šarku-*. Kloekhorst (HIL 734-5) connects *šarku-* with the IE root **serk(’)-* [LIV 536 instand setzen, wieder gutmachen], and the usual outcome of the velars in Lydian is [k], not [f]. *Teśašta/i-* “left side” may have a cognate in Hittite *daššau-/daššu-* “strong, powerful, heavy”, but this is entirely speculative. Generally we find simple i- or u-

stems as the adjective form here (*palhi-/ai-*, *parku-/au-*, *talugi-/ai-*). Interestingly, although the *-ašti-* suffix is usually described as a deadjectival suffix, there is no Anatolian evidence that would suggest *-ašti-* is derived from an adjective. We see in other cases that a word such as *pargawēške/a-* “to become high or tall (vb.)” clearly preserves traces of the morphology upon which the word is derived: (((*parku*^{ADJ})-*ēšš*^{STATIVE VB.})-*ške/a-*^{IMPERFECTIVE VB.}). However, forms such as *palheššar/palhešn-* “width” and *parkeššar/parkešn-* “height (n.)” arguably both have the same initial suffix found in *-ašti-*, albeit with a different ablaut grade (**e* instead of **o*). I would derive *palheššar/palhešn-*, for example, as (((*palh-*)-*eš*^{ABSTRACT N.})-*ar/-n*^{N.}). Generally speaking PIE s-stems were verbal abstracts, and it is for this reason I argue that the *-eššar/-ešn-* and *-ašti-* suffixes have an underlying **-e/s-* suffix. Presumably there was historically a form **plh₂-es-* or **polh₂-es-* once with a meaning of “width, breadth”. Looking beyond Anatolian, the PIE root **pleh₂-* is attested in a reasonably large number of forms (see NIL 562-4). There are no s-stems, although there is the Greek form *πᾶλαστή* “palm of the hand, four fingers’ breadth”. *πᾶλαστή* seems to be an st-stem built on the root with an **-eh₂* derivation –or an s-stem with a **-teh₂* derivation. The PIE cognates of *dalugašti-* almost all appear to be thematic o-stems (e.g. Gothic *laggs* “long”, Latin *longus* “ibid.”, Greek *δολιχός* “ibid.”, Sanskrit *dīrghās* “ibid.”, OAv. *darəga-* “ibid.”, OCS *dlъgъ*, Lith. *ilgas*). *Pargašti-* has a huge range of PIE cognates. Specifically, the root **b^herg^h-* [NIL 30-4 hoch werden, sich erheben] preserves an s-stem in Indo-Iranian: Vedic *-barhas-* (second element of a compound) “strength” and Young Avestan *barəzah-* “height, mountain”. Although not entirely clear, we might also add Classical Armenian *-berj* to this list (*barjr-a-berj* “very high”, *erkn-a-berj* “himmelhoch”). Hittite *šaudišt-/šāṁitišt-* “weanling” [HIL 739-40] from **so(m)-uet-es-t-* (lit. “(cow/sheep having) one-year”) is possible support for the idea that the *-ašti-* suffix was originally a t-stem derived from an s-stem. S-stem **uet-os-* is well documented with Greek *ἔτος* “year”, Latin *vetus* “old”, and Cuneiform Luwian *ušša/i-* (<**ut-s-o-*) “year” (note that the Hittite preserves an e-grade of the s-stem suffix, and Luwian an o-grade). From here it is not hard to imagine that the incredibly productive motion-suffix in **-ih₂* was added directly to the **-t-* suffix. It would be difficult to accept that the instrumental adverb suffix **-ti* was added to create a noun, and because the **-ti-* nominal suffix as found in the later IE languages is otherwise essentially non-existent in Anatolian, I would be inclined to rule out that analysis as well.

S-stems, t-stems, and i-motion suffixes are all well documented in Anatolian, and as such I think the combination of the three is the best explanation for the *-ašti-* suffix.

The Hittite *-zil-* (sometimes written *-zēl-*), and Palaic *-til-*, suffix, appears, to my knowledge, 5 times: *ḫapalzēl-* “pot-dish, stew, soup”, *ḫaz(z)ila-* (?) “double fistful, cupped hand”, *šarnikzēl-* “compensation, compensatory damages, replacement”, *šunnuttil-* “Füllung (filling) or out-pouring”, *tayaz(z)il-* “theft”. According to Hoffner and Melchert (2008, p.61), *zil-* stems derive result nouns (usually neuter) from verbs. *Šarnikzēl-* which is reasonably well understood is clearly derived from the verb *šarni(n)k-^{zi}* “to give compensation, to compensate/make up for something” from the PIE root **serk^(s)-* [LIV 536 instand setzen, wieder gutmachen]. Thus *šarnikzēl-* could be “something (e.g. money, or a replacement item) with which one compensates someone for damage done”. *Tayaz(z)il-* is from the Hittite verb *tāye/a-* “to steal” from PIE *1.*teh₂-* [LIV 616 stehlen]. I am reluctant to follow Hoffner and Melchert in describing this as a result noun. “Theft” implies an event, not the thing stolen. I would agree, however, that the word is ultimately deverbal. Palaic *šunnuttil-* appears to be related to the Hittite verb *šunna-ⁱ* “to fill” and Palaic *sūnat* from PIE *?*seuḥ₃-* [LIV 539 voll sein/werden]. LIV and HIL both argue that this preserves a **-ne-* verbal infix (**su-ne-h₃-e-/*su-n-h₃-*). *Šunnuttil-* appears to have a **-u-* suffix built directly to the verb, which may suggest this word has an intermediary nominal or adjectival stage in its derivation. There is a related Cuneiform Luwian form *šunatruwant(i)-* “rich in out-pourings” which Kloekhorst (HIL 785-6) argues is a *uent-* stem built onto a hypothetical, unattested form ****sunattar* “out-pouring”. We must also add the Hittite forms *šunnaziyant-* “brim-full (adj.)” and *šunnummeššar-* “filling (?)”. *Šunnummeššar-* clearly has an *-eššar-* suffix which forms neuter action nouns and abstracts from verbs (Hoffner and Melchert, 2008, p.58), but other aspects of this word are opaque. The [mm] is unusual, but it may reflect a zero-grade of the *-uman-* suffix (i.e. **su-nh₃-umn-es-or*). Anatolian has a range of different l-stems: *-il-* (e.g. Hittite and Cuneiform Luwian *ḫurkil-* “unnatural sex act, incest, bestiality” > “perversion”; *alil-* “blossom”), *-al-*; *-ala-* (adj.); *-alla/i-*; *-(a)t(t)alla-*; *-ili-* (adj.); *-ul-*; *-ula-*; *-ulli-*. Anatolian/Hittite preserves a whole series of neuter deverbal nouns in *-Vl-*. The Luwian/Hittite *-al-* stems all seem to form instrumental nouns (*ardal-* “rock cutting saw”; *ḫuḫupal-* “a percussion instrument”; *išḫiyal-*

“band”; (Luwian) *ariyal-* “basket”; (Luwian) *winal-* “staff, club”, (Luwian or Hittite) *tarmal-* “hammer”), and most, if not all, seem to have zero-grade morphemes on the root. Likewise, Hittite nouns in *-ul-* are neuter and mostly deverbal, and sometimes have instrumental force (e.g. *šešarul-* “sieve” from *šešariya-* “to sift”), although this is not always the case (e.g. *parš(i)ul-* “crumb” and *paršil(a)-* “a fragment of bread” from *paršiya-* “to crumble”). Looking at non-verbal cognates of these words from the other IE families, we find the following: *šarnikzēl-* has Greek ἔρκος “fence, enclosure (s-stem)”, ὄρκαν/ ἔρκανη “fence, enclosure (n-stem + eh₂-stem)”, ὄρκος “oath, object by which one swears (o-stem)”, Ἐρκῶνα/Ἐρκυννα “title of Demeter (cf. Δίκτυνα “epithet of Artemis” – Δίκτυνα presumably reflects an ending in **-us-n-h₂*), Latin has *sarcina* “bundle, pack (n-stem + eh₂-stem)”; *tayaz(z)il-* has Sanskrit *tāyú-* “thief (u-stem)”; OCS has *tatъ* “thief (ti-stem)”, OIr has *táid* “thief (ti-stem)”, Lydian has *teju-* (u-stem reconstructed from Greek gloss), and Greek has *τηῦσιος* “idle, vain (tjo-stem?)”. *Šunnuttil-* appears to be a solely Anatolian root, although its suffix may have a shared origin with Greek words such as *χελῶτις* “a name for Aphrodite (appears to be a t(i)-stem)”. Cognate with this name is *χελύνη* “lip” (with a long [ū]) which must reflect a suffix **-us-neh₂*, and *χέλυσ* “tortoise” and *χεῖλος* “lip, edge”, which both probably reflect a simpler **-us-/u_s-* suffix. Finally, to tie these forms together, *χελύσσομαι* “to expectorate, spit” must reflect an ut-stem. I propose that it is easier to assume a heteroclitic **-u_s-/-u_sot-* (**-u_ses-/u_set-*, **-us-*) suffix, which is found most commonly as the suffix deriving perfect participles. *χελῶτις*, then, would be an i-stem derivative of the t-variant. *Šunnuttil-*, therefore, could well reflect **su-n-h₃-ut-il-*. Puhvel (HED 3:281-2) takes *haz(z)ila-* “double fistful” from the verb *hatt-^{a(ri)}/hazziye/a-^{zi}* “to pierce, to prick, to stab, to hit (a target), to engrave (a tablet)” from the PIE root, **??**.**h₂et-* [LIV 274 ein Loch machen, stechen]. Unfortunately this root too is only attested in Anatolian. Likewise, the semantics are problematic enough to doubt this reconstruction anyway. Providing *hapalzēl-* “pot-dish, stew, soup” is connected to the unattested verbal root **h₂b^hel-* meaning “to swell”, we have the following PIE cognates: ON *bollr* “ball (n-stem)”; Greek *φαλλός* “penis (no-stem)”; Latin *follis* “bag, sack; ball, testicle (ni-stem)”; OIr *ball* “member, penis (no-stem)”. Perhaps, too, we might add the root and stem that gives us Modern English *bold* from **b^hol-to-* (Gothic *balps* “bold, frank”). Semantically connecting this root to *hapalzēl-* is not too difficult considering forms such as ON *bolli* “cup” and OE *bolla* “bowl”


which both appear to be zero-grades (*hapalzēl-* may have a zero-grade root as well) and n-stems of the same root ***b^hel-**. Somehow we would have to explain the loss of the initial ***h₂** laryngeal in Greek [ά] (e.g. φαλλός, not ****άφαλλός**), or alternatively the acquisition of the [ħa-] in Hittite. The latter situation could be possible if we accept that [ħa-] corresponds to the preverb ***h₂o-** [LIPP 2:323-34 neben, bei; zu – hin] which, Dunkel argues (p.323), appears at the beginning of the Hittite verb *ħa-menk-* “to tie, betroth” and Hittite noun *ħa-šduēr* “twigs, brush(wood)(?)”. This word possibly has a close parallel in Greek ὄζος “bough, branch, twig” and would make possible an underlying PIE form ***h₂o-sd-** “that which has a seat on, or by, something (?)”. Among others, Greek provides us with one form with an ***h₂o-** preverb: ὀφέλλω “to increase, enlarge, strengthen”. This could easily, and I am fairly certain that it does, come from the root ***b^hel-** meaning “to swell” (see LIPP 2:324). The double [λλ] in ὀφέλλω must reflect ***ln** or ***lj**. I am inclined to think it reflects ***lj** because an ***n** would most likely be introduced by a ***-ne-** infix, which would imply that there is a final laryngeal on the root. Greek preserves a few forms that are not n-stems, such as φᾱλῆς -ῆτος “phallus, name for a deific personification of a phallus (t-stem)”, and φαλλήν -ῆνος “another name for Dionysus (this actually seems to be a pure n-stem, unlike φαλλός (n-o-stem))”. I am not certain of the origin of Greek nouns in -ητ-, but it is possible that the long [ē] is analogical from the nominative (whose length is in turn compensatory, e.g. ***-ets** > ***-ēs**). Such forms (all masculine) as ἀργής -ῆτος “shining, white” (which show a short [e] in Epic ἀργέτι, ἀργέτα – exactly what we would have expected in the non-nominative cases), κέλης -ητος “courser, riding horse”, ἔχης -ητος “a man of substance”, λέβης, ητος “kettle, cauldron”, τάπης -ητος “carpet, rug”, and of course φᾱλῆς -ῆτος as mentioned earlier, all seem to reflect t-stems. Although far from certain, I would suggest an early-PIE form ***(h₃o)-b^hl-(e)t-**, which Hittite enlarged with ***-il-**. Finally, these words in *-zil-* have too few cognates, and are too poorly understood to make a real conclusion about the origin of the suffix. I am inclined to think this form is far better reflected by a deverbal t-stem (***-et-/ot-**, or ***-ut-**) followed by a suffix in ***-il-** (which may be in fact ***-i-** + ***-l-**).

There are a few Anatolian words which do not fit into any of the categories I discussed earlier: *gagaštiya-* “a grasshopper or hare (?)”; *ħapuštiya-* “a drink of some kind”; *kirnuzi-* or *pisnuzi-*

“some kind of mineral used in glass (?)”; *parzašša-* “weapon, tool, or material (?)”; *taišzi-* “hay-barn (?)”. Unfortunately each of these words is very poorly understood.

Gagaštiya- is a reduplicated noun –reduplication is a common process among plant, animal, and anatomical nouns. In some cases reduplication may be onomatopoeic. The meaning is inferred from the following sentence found in the *Song of Ullikummi*: ^DU-aš-kan ^{Giš}tiyaridaš šarā gagaštiyaš mān watkūt (“The Storm-God jumped upon his wagon like a G.”). Puhvel (HED 4:17) suggests that the word could come from the root meaning “grey”, **k’eh₁-(s)-* (Sanskrit *śaśa-* “Hare”, Welsh *ceinach* “ibid.”, OPruss *sasins* “ibid.”, OHG *haso* “ibid.”, OE *hara* “ibid.”, OHG *hasan* “grey, shining”, OE *hasu* “grey-brown”, Latin *cānus* “white”). Although this could semantically work, and the Sanskrit form might agree with reduplication, I am reluctant to accept this interpretation because the single [k] points to a **g^{(s)(h)}*, not to a **k^(s)*. The root which seems to be *gaš(t)* resembles better the noun *gāšt-/kišt-* “hunger, starvation, famine” from the PIE root **g^{(s)(h)}osd-* or **g^{(s)(h)}d-* which has cognates in Tocharian (TA *kašt*, TB *kest* “hunger, famine”). This would suggest a meaning along the lines of “the hungry one” for *gagaštiya-*, and it would seem that this is an *–iya-* stem (**-iō-*) to a dental-final root.

Ḫapuštiya- is even more obscure. It refers to some kind of drink, although there is no known etymology of which I am aware. I tentatively suggest that it could be related to the Hittite verb *ḫap(p)uš(š)-^{zi}* “to make up for, to make up, to bring after” (HIL 299-300), and have the sense of “a reviving/restoring drink”. The suffix *–tiya-* is likely to be equivalent to PIE **-tjō-* (or perhaps more accurately to **(V)t-jo-*). In this case, the *–uš-* part of this word is likely to be part of the root (e.g. **h_{2/3}b^heus-*). Note that there is a root reconstructed in LIV with the form *?*h₃peus-* [LIV 303-4 sich mehren, reich werden an], although for these to be connected we would have to explain the semantic shift from “to increase/grow (oneself), become rich” to “to make up for, to make up”. The original **p* is possible if we accept Hittite variant spelling in [pp] as original.

^{NA4} *kirnuzi-* or *pišnuzi-* has no etymology. It refers to some mineral (^{NA4}) used in glass-making. The sign  can represent [kir], [gir], [piš], [biš], [paš], and [pùš], so the phonetics are not

particularly clear. This could certainly be a loan word. There is a phonetically similar word ^{NA4} *kirinni*- “porphyry or carnelian” which Tischler (HEG 584) believes to be borrowed from Sumerian (*girim* “shiny, bright”) via Akkadian. Since porphyry and carnelian are both silicates, and silicates (at least in the sand form) are used in glass production, it is quite conceivable that these terms are connected. A single [z] between vowels is a bit unusual in Hittite inherited words and, as such, it might reflect an Akkadian sibilant (similar perhaps to the Hittite *abuzzi*- “storehouse” (see the first entry in my dataset) for Akkadian *abūsu* “ibid.”).

Parzašša- is a poorly understood adjective that can be applied to arrows and to a leopard protomes (*CHD*, Volume P, pp.202-3). It appears to be of Luwian origin, solely because of the presence of the *-ašša/i-* (PIE **-eh₂so-*) appurtenance suffix. There are cases in Luwian, and Hittite, where there exists an epenthetic /t/ between a resonant /m, n, r, l/ and /s/ (Melchert, 1994, p.272). This results in [nz], [rz], or [lz] (I am not aware of [mz] ever occurring, however). I think it is highly unlikely that this is a *ti*-stem, or that it even reflects **-rti-/rtjo-*.

Finally, *taišzi*- “hay-barn” has been reconstructed in a number of different ways: Kloekhorst analyses this word as **d^hoh₁-es-ti-* from the root **d^heh₁-* [*LIV* 136-8 *stellen, legen, setzen; herstellen, machen*]; Rieken (1999, p.190) reconstructs it to the same root, but with unusual reduplication, as **d^hoh₁-es-d^hh₁-ti-*; Melchert (1994, p.166) reconstructs the form as PA **taist-ti-*; Oettinger reconstructs it as **d^hoh₁-es-t-i-*¹¹⁹, which is essentially the same as Kloekhorst –although they are not morphologically equivalent. I prefer Oettinger’s morphological analysis here, mainly because of my scepticism regarding the existence of the nominal **-ti-* morpheme. The sequence [szi] is very unusual, which is certainly why Melchert reconstructed this word as he did.

CONCLUSION

This concludes my discussion of PIE *ti*-stems. I have collected and discussed a huge number of actual, or potential, *ti*-stems from Celtic, Germanic, Greek, Indo-Iranian, Italic, and Anatolian.

¹¹⁹ Norbert Oettinger, *Die Stammbildung des hethitischen Verbums* (Erlanger Beiträge zur Sprach und Kunstwissenschaft vol.64) (1979), p.477.

Some of my findings support previous scholarship –especially the well documented fact that *ti*-stems tend to have zero-grade roots –although some contradict. I believe it more likely that when deriving *ti*-stems from any particular verb, it was actually more common to produce simplexes than complexes (this was the case for all the language families except Iranian). This contradicts the theory introduced by Karl von Bahder (1880) that the **-tu-* suffix appeared with simplexes, and the **-ti-* suffix appeared with complexes. Likewise, it contradicts the similar observations of Wackernagel (1918), and the theory of Olsen and Rasmussen (1999) that **-ti-*, **-tu-*, and **-to-* were different versions of one morpheme under different stress conditions. I see no reason to challenge the idea that the **-ti-* suffix helped form action and result nouns from verbs, although in many ways it is an over-simplification because *ti*-stems seem to exist across the spectrums of abstractness and animacy. Considering the majority of scholarship on the **-ti-* suffix has ignored the Anatolian data (for various reasons), I have gathered what evidence I can for such a suffix. It is notable that the standard work on Hittite nominal morphology (Rieken, 1999) says very little about the suffix, but seems to tacitly assume that it was present in Anatolian. I have investigated the three stems which have been traditionally associated with the PIE **-ti-* suffix, *-zil-*, *-uzzi-*, and *-ašti-*, plus five words that are poorly understood. Considering how the Anatolian languages love to stack derivational suffixes, I find the presence of *-uzzi-* nouns and the absence of *u*-stems, or any stem reflecting a **u*, an embarrassment. Likewise, the fact that *-ašti-* is said to have derived nouns from *u*-stem adjectives, but does not preserve a **u*, is also strange. In the case of *-uzzi-* nouns where there is instead ample attestations of verbal nouns in *-(u)war* (even when we have a poorly attested root), it seems far preferable to assume that *-uzzi-* is underlyingly a stack of a zero-grade *-(u)war/- (u)wan-* suffix, a zero-grade **-t-* suffix, and a **-ih₂- Motion* suffix. In the same fashion, *-ašti-* is a stack of **-os-*, **-t-*, and **-ih₂-*. The fact that we find nouns in final *-št* (from **-Vs-t*) in Hittite supports the idea that these suffixes were being stacked. We can imagine that *-zil-* is also a stack of the Anatolian *-t-* and *-il-* suffixes. By reconstructing these suffixes with **-ti-*, we reconstruct a suffix that has otherwise no precedent in Anatolian over suffixes that are highly productive and well attested. My ultimate conclusion is that the traditionally reconstructed **-ti-* suffix was most probably a late-PIE creation (presumably created from **-t-i-* which would have been reanalysed as a single suffix). Although the absence of an inherited feature is not always evidence that

a daughter family has split off from the rest (afterall, the family could have independently deleted the feature), I think this supports the fairly well held theory that the Anatolian branch split off from PIE at an earlier date than the rest of the PIE sub-families (or at least the ones studied in this thesis –I cannot make any claims about Tocharian, for example).

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